

ROBINSON HELICOPTER COMPANY

R44 ILLUSTRATED PARTS CATALOG

RTR 460 VOLUME II

Production Certificate Number 424WE

Type Certificate Number H11NM



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PUBLICATIONS

Viewing RHC Maintenance Manuals (MMs) and Illustrated Parts Catalogs (IPCs) online at <https://robinsonheli.com> is recommended to ensure use of current data. Viewing MMs and IPCs offline via paper or digital download requires verification that the data is current. Refer to the online MM or IPC Revision Log for the list of current pages.

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Subscription order and renewal forms are located at <https://robinsonheli.com>.

WARRANTY INFORMATION

Helicopter and parts warranty information is located at <https://robinsonheli.com>.

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		HEADLINER AND INSULATION INSTALLATION		
25-33-1	C003-21 *	Insulation** (forward, RH; for ships with hand-holds)	X	1
2	C003-19 *	Insulation** (aft, RH; for ships with hand-holds)	X	1
3	C003-18 *	Insulation** (aft cabin; for air conditioned ships)	X	1
4	C212-1	Trim (hand-hold; forward, LH and RH)	X	2
5	C003-22 *	Insulation** (forward, LH; for ships with hand-holds)	X	1
6	C212-2	Trim (hand-hold; aft, LH and RH)	X	2
7	C003-20 *	Insulation** (aft, LH; for ships with hand-holds)	X	1
8	C003-2 *	Insulation** (aft cabin; for non-air conditioned ships)	X	1
9	C212-3	Patch** (installed behind items 4 and 6; [4] R44 and R44 II, [2] R44 Cadet)	X	A/R
10	C003-14	Insulation**	X	2
11	C003-13	Insulation**	X	2
12	C003-12	Insulation**	X	2
13	C003-15	Insulation**	X	2
14	C003-16	Insulation**	X	2
15	C003-17	Insulation**	X	2
16	B270-8QT	Adhesive	X	A/R
17	F470-4	Liner (aft, RH baggage compartment; replaces C003-7 insulation)	X	1
18	F470-3	Liner (aft, LH baggage compartment; replaces C003-7 insulation)	X	1
19	F470-2	Liner (forward, RH baggage compartment; replaces C003-8 insulation)	X	1
20	F470-1	Liner (forward, LH baggage compartment; replaces C003-8 insulation)	X	1
21	C003-5 *	Insulation** (forward, RH; for ships <u>without</u> hand-holds)	X	1
22	C003-3 *	Insulation** (aft, RH; for ships <u>without</u> hand-holds)	X	1
23	C003-6 *	Insulation** (forward, LH; for ships <u>without</u> hand-holds)	X	1
24	C003-4 *	Insulation** (aft, LH; for ships <u>without</u> hand-holds)	X	1
25	D598-4 *	Insulation** (aft cabin; for ENG/Police air conditioned ships)	X	1
26	D598-2 *	Insulation** (aft cabin; for ENG/Police non-air conditioned ships)	X	1
27	C003-25 *	Insulation** (aft cabin; for Cadet air conditioned ships)	X	1
28	C003-24 *	Insulation** (aft cabin; for Cadet non-air conditioned ships)	X	1
29	D670-6	Trim (replaces C474-3 trim)	X	1
30	MS20426AD3	Rivet	X	4

NOTES * Refer to *chart* at the end of parts list when ordering. Include code after dash no., for example, C003-21 in tan, order "C003-21TN".

** Install using item 16.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY						
		HEADLINER AND INSULATION INSTALLATION (Cont'd)								
25-33-31	MS21069L08K	Nutplate (two places, LH and RH)	X	2						
32	MS27039C0806	Screw	X	6						
33	C465-1	Panel (Ref, LH; see Figure 25-1)								
34	C015	Cabin Assembly (Ref)								
35	C003-8	Insulation (earlier R44s; forward baggage compartment)	O	2						
36	C003-7	Insulation (earlier R44s; aft baggage compartment)	O	2						
<table><tr><th>Code</th><th>Definition</th></tr><tr><td>GR</td><td>Gray</td></tr><tr><td>TN</td><td>Tan</td></tr></table>					Code	Definition	GR	Gray	TN	Tan
Code	Definition									
GR	Gray									
TN	Tan									
NOTES										

CHAPTER 29

HYDRAULICS

<i>Figure</i>	<i>Title</i>	<i>Page</i>
29-1	Forward Servo Installation	29.0
29-3	Aft Servo Installation	29.2
29-7	Hydraulic Reservoir Installation	29.6
29-11	Hydraulic Reservoir Installation	29.10
29-15	Forward Servo Hoses Installation	29.14
29-17	Hydraulic Pump Installation	29.16

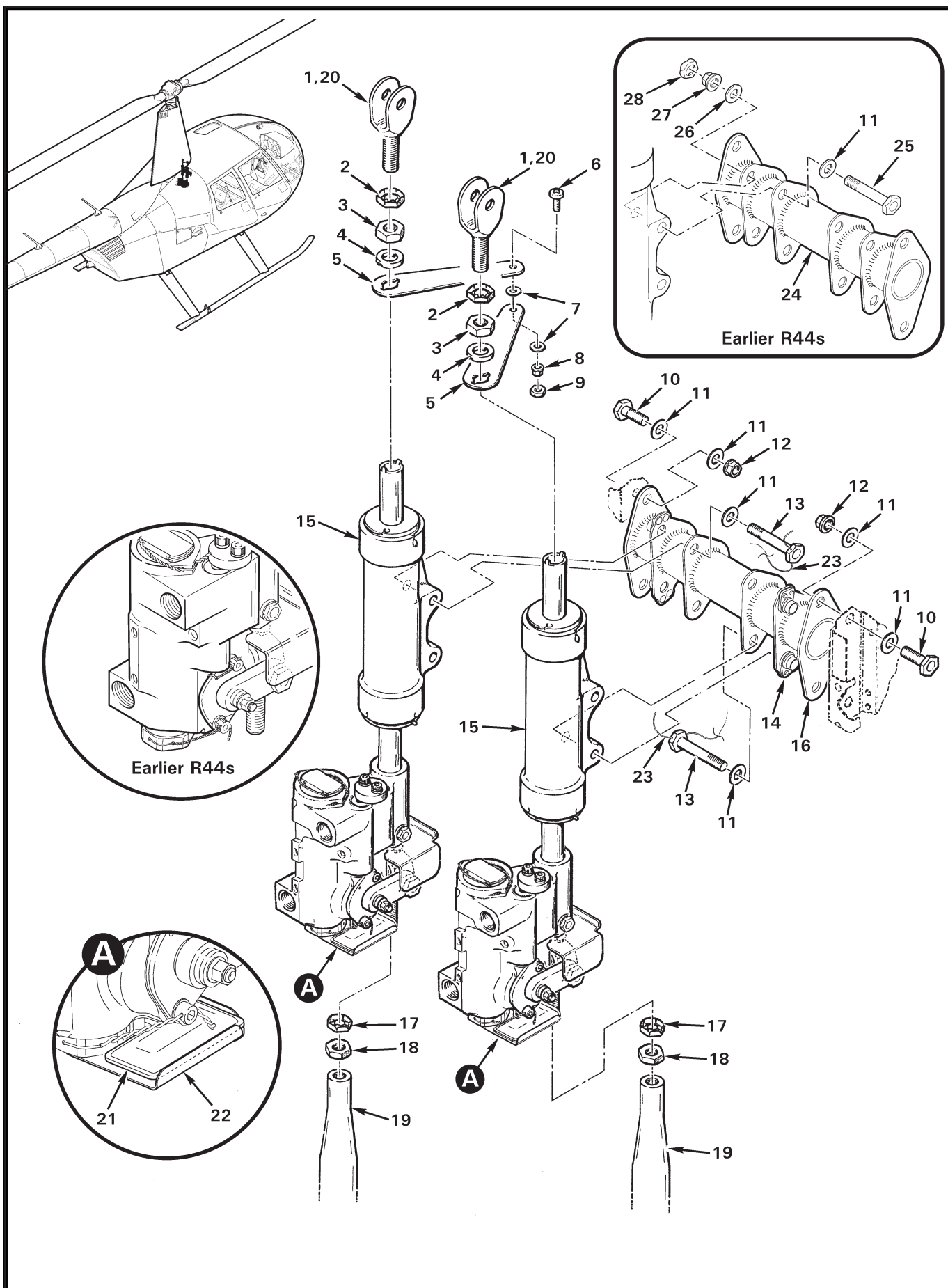


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		FORWARD SERVOS INSTALLATION		
29-1-1	D200-1	Clevis (install using item 20)	X	2
2	B330-19	Palnut	X	2
3	AN316-6R	Nut	X	2
4	D200-3	Washer	X	2
5	D200-2	Scissor (overlap direction not critical)	X	2
6	MS27039C0806	Screw	X	1
7	NAS1149FN832P	Washer	X	2
8	D210-08	Nut	X	1
9	B330-6	Palnut	X	1
10	NAS6604-2	Bolt	X	4
11	NAS1149F0432P	Washer	X	12
12	D210-4	Nut	X	4
13	NAS6604H16	Bolt	X	4
14	MS21087-4	Nutplate (install using MS20426AD3 rivet [8])	X	4
15	D212-1	Servo Assembly (includes items 17 and 18)	X	2
	D212-1R	D212-1 Servo Assembly (Overhaul exchange; requires core deposit. Includes items 17 and 18.)	X	2
16	D201-6	Support (Incl item 14)	X	1
17	B330-16	Palnut	X	2
18	AN316-5R	Nut	X	2
19	C121-28	Push-Pull Tube (Ref, see Figure 67-27)		
	C121-24	Push-Pull Tube (Ref, see Figure 67-31)		
20	B270-21	Protectant	X	A/R
21	G801-3	Pad	X	2
22	D525-2	Tray	O	2
23	MS20995C32	0.032 in. dia. Safety Wire	X	A/R
24	D201-5	Support (superseded by item 16)	O	1
25	NAS6604-16	Bolt	X	4
26	NAS1149F0432P	Washer	X	4
27	D210-4	Nut	X	4
28	B330-13	Palnut	X	4
NOTES				

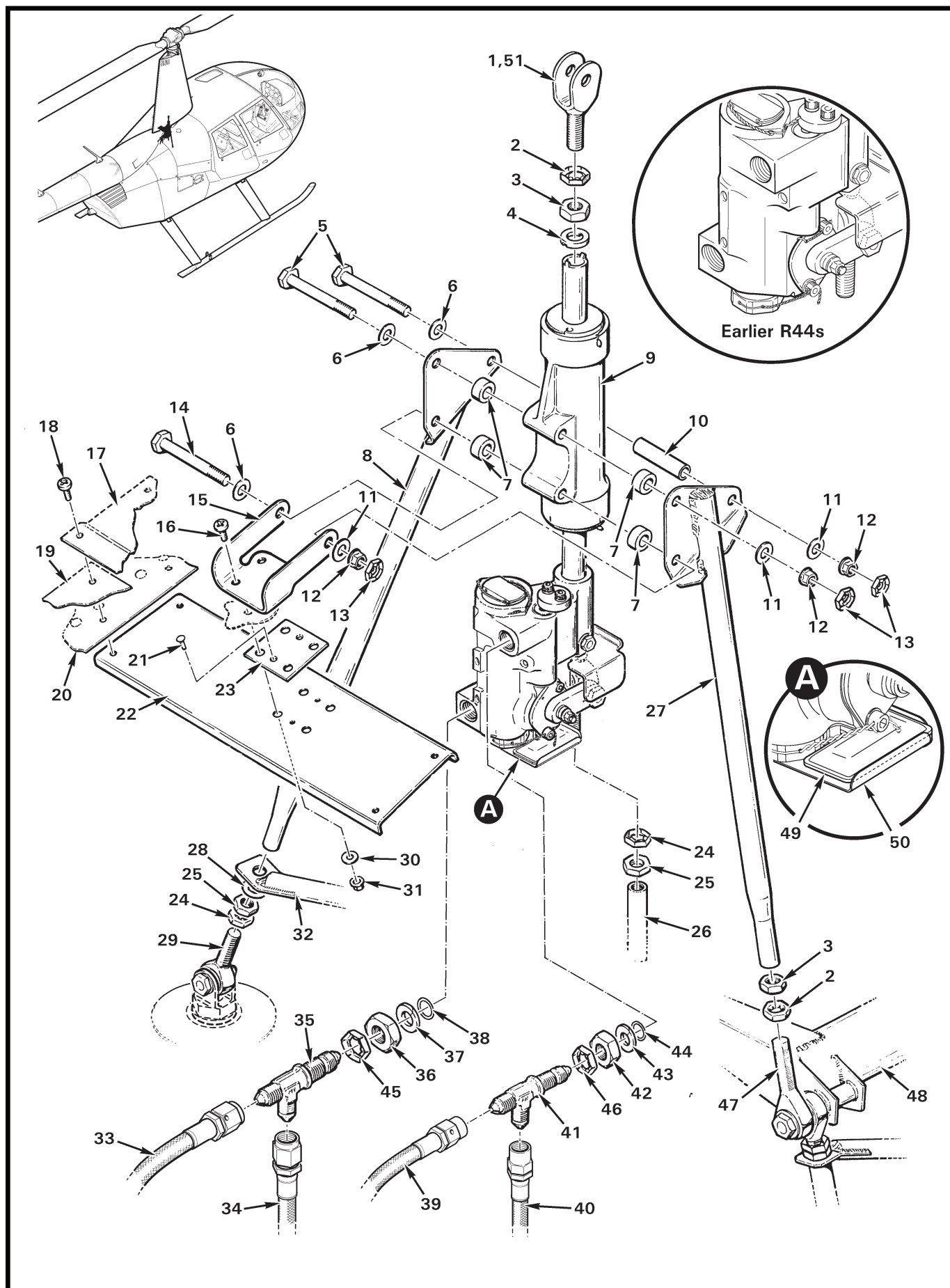


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		AFT SERVO INSTALLATION		
29-3-1	D200-1	Clevis (install using item 54)	X	1
2	B330-19	Palnut	X	2
3	AN316-6R	Nut	X	2
4	D200-3	Washer	X	1
5	NAS6604-24	Bolt	X	2
6	NAS1149F0432P	Washer	X	3
7	C130-15	Spacer	X	4
8	D203-1	Support – LH	X	1
9	D212-1	Servo Assembly (includes item 24[1] and item 25 [1])	X	1
	D212-1R	D212-1 Servo Assembly (Overhaul exchange; requires core deposit. Includes items 24 [1] and 25[1].)	X	1
10	C130-14	Spacer	X	1
11	NAS1149F0463P	Washer	X	3
12	D210-4	Nut	X	3
13	B330-13	Palnut	X	3
14	NAS6604-25	Bolt	X	1
15	D202-4	Bracket Assembly	X	1
16	MS27039C0807	Screw (or MS27039C0808)	X	8
17	C347-6	Panel (Ref, see Figure 53-15)		
18	MS27039C0807	Screw	X	4
19	C706-1	Tailcone Fairing (Ref, see Figure 53-13)		
20	C028-1	Main Fuel Tank (Ref, see Figure 28-1)		
21	NAS1097AD3	Rivet	X	2
22	D202-1	Channel (see also Figure 53-15)	X	1
23	D202-3	Shim	X	A/R
24	B330-16	Palnut	X	2
25	AN316-5R	Nut	X	2
26	C343-8	Tube (Ref, see Figure 67-53)		
27	D204-8	Support – RH (Supersedes D204-1 support.)	X	1
	D204-1	Support – RH (Not for use with R44 II.)	O	1
28	NAS1149F0532P	Washer	X	1
29	A101-4	Rod End (Ref)		
NOTES				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		AFT SERVO INSTALLATION (Cont'd)		
29-3-30	NAS1149FN832P	Washer	X	4
31	MS21042L08	Nut	X	4
32	D208-1	Weldment (Ref, see Figure 67-53)		
33	D205-16	Hose (90° elbow at reservoir end)	X	1
	D205-6*	Hose (straight both ends)	X	1
34	D205-7	Hose	X	1
35	AN804D4	Tee	X	1
36	D452-4	Nut	X	1
37	D454-4	Retainer (reusable, supersedes MS28773-04)	X	1
38	MS28778-4	Packing (o-ring)	X	1
39	D205-12	Hose (90° elbow at reservoir end)	X	1
	D205-2*	Hose (straight both ends)	X	1
40	D205-3	Hose	X	1
41	AN804D3	Tee	X	1
42	D452-3	Nut	X	1
43	D454-3	Retainer (reusable, supersedes MS28773-03)	X	1
44	MS28775-011	Packing (O-ring)	X	1
45	B330-21	Palnut	X	1
46	B330-19	Palnut	X	1
47	D173-1	Rod End (Ref)		
48	C339-10	Jackshaft Weldment (Ref, see Figure 67-53)		
49	G801-3	Pad	X	1
50	D525-2	Tray	O	1
51	B270-21	Protectant	X	A/R
NOTES * Installed on earlier R44s. See also Figure 29-7.				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		HYDRAULIC RESERVOIR INSTALLATION* (Cont'd)		
29-11-52	B330-25	Palnut	X	1
53	B330-19	Palnut	X	2
54	B330-21	Palnut	X	1
55	AN6235-1A	Filter	X	1
56	MS28778-14	Packing (o-ring)	X	1
57	D516-1	Cap	X	1
58	MS20995C20	0.020 in. dia. Safety Wire	X	A/R
59	MS20995C32	0.032 in. dia. Safety Wire	X	A/R
60	D507-1	Solenoid Assembly (14-volt ships)	X	1
	D507-2	Solenoid Assembly (28-volt ships)	X	1
61	A215-907	Packing (o-ring)	X	1
NOTES * Ship S/N 1000 and prior.				

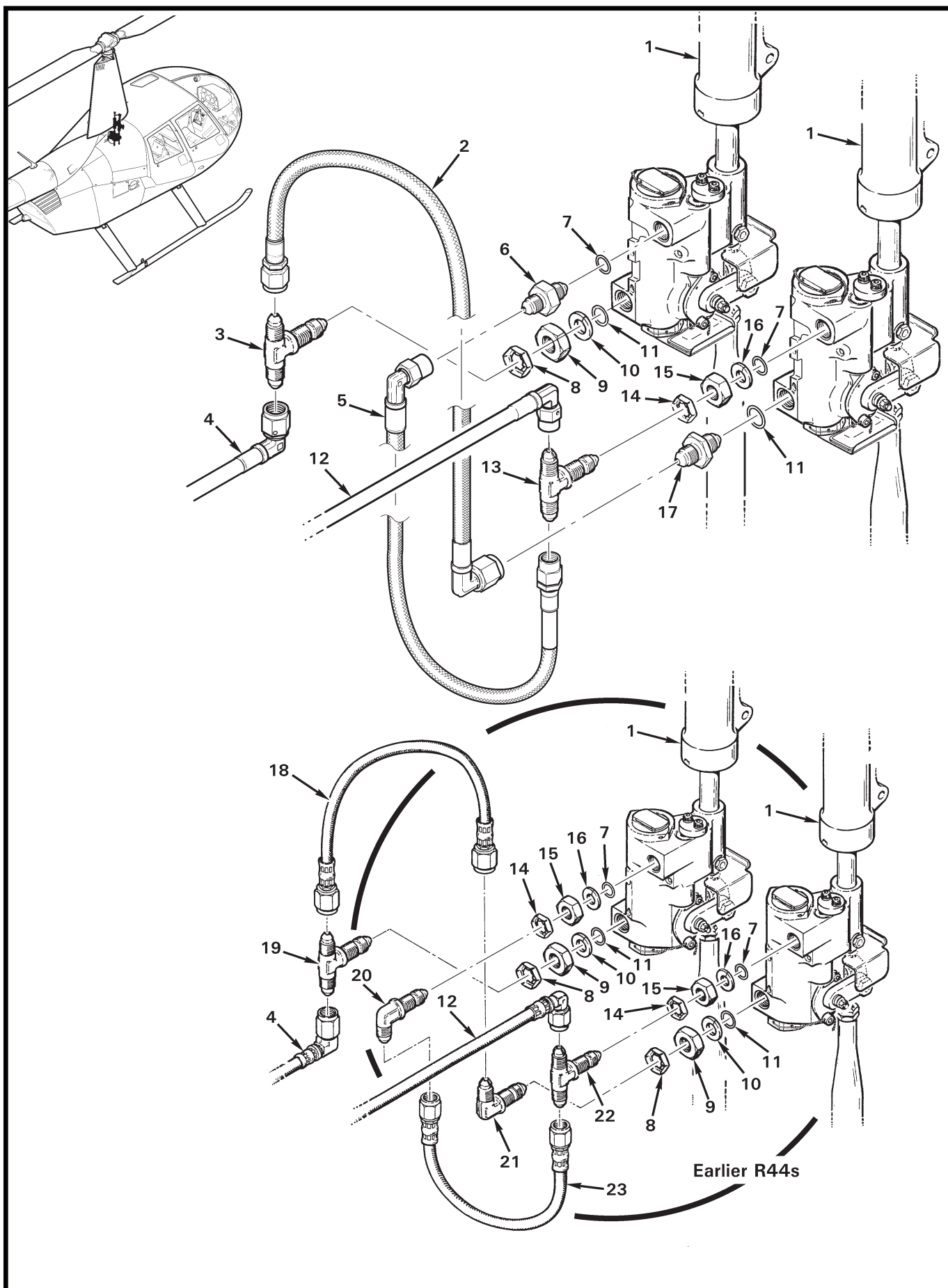
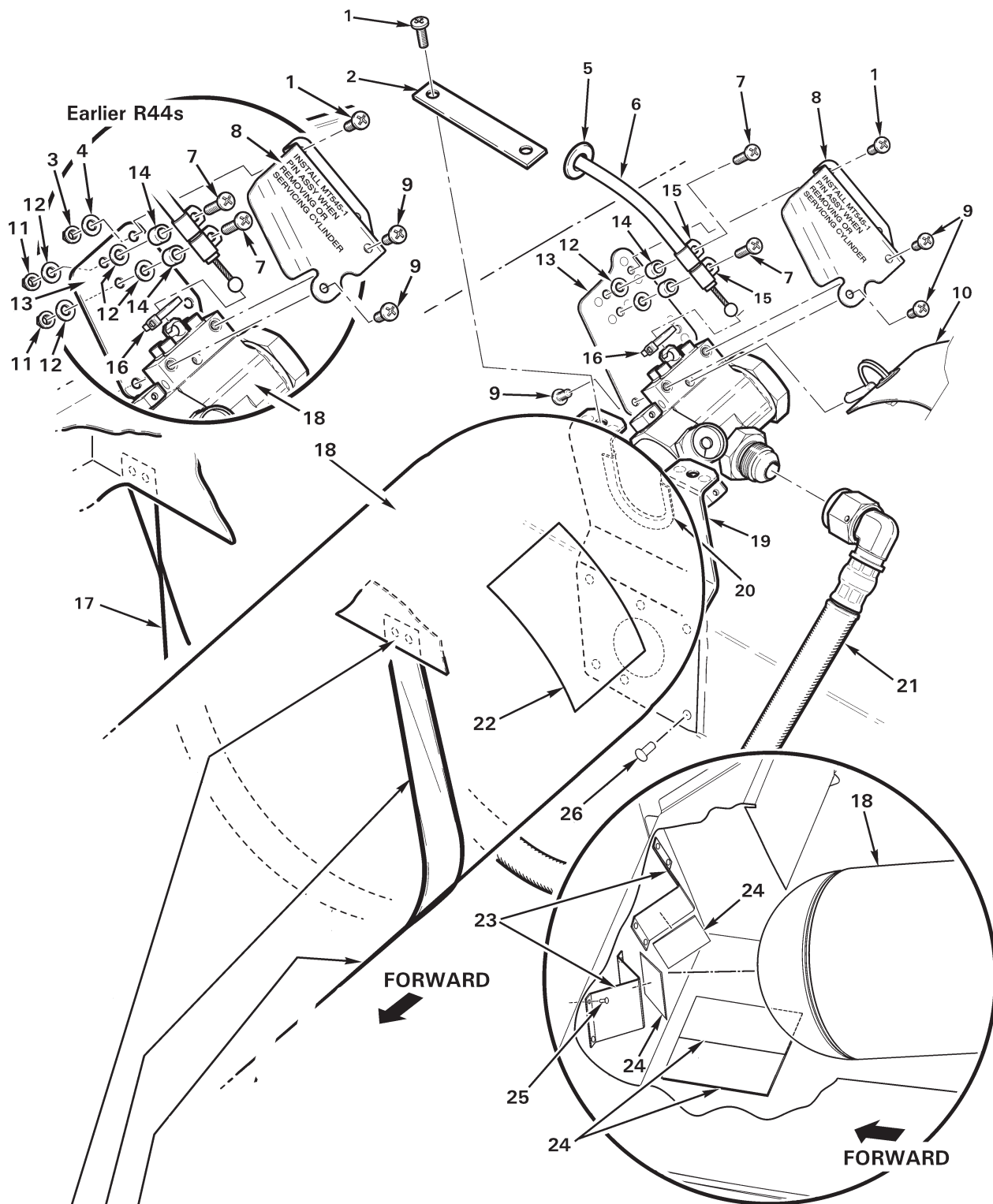
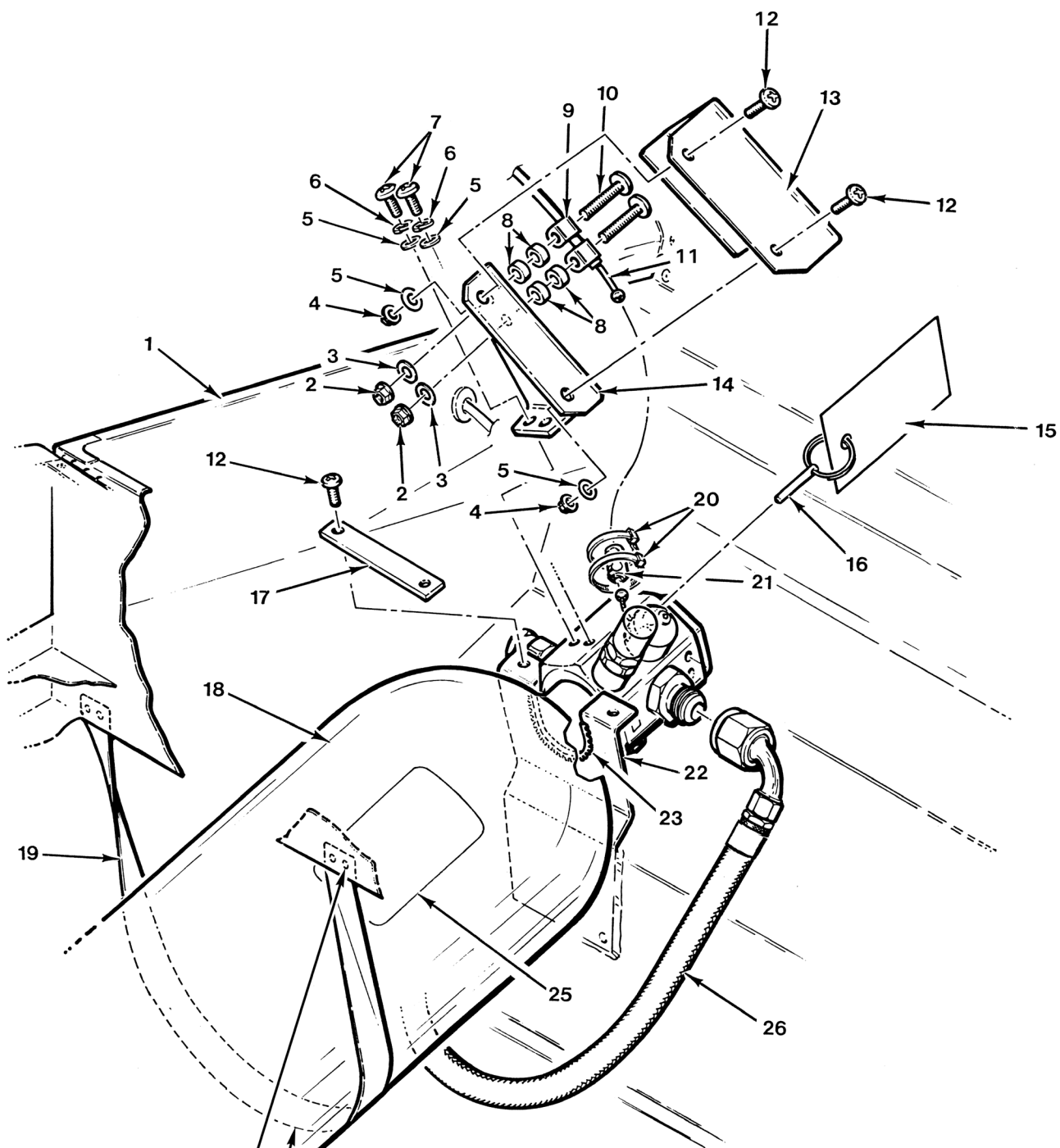


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
32-11B-1		LANDING GEAR LUG – EXTENSION INSTALLATION		
	C239-12	Strut Assembly – Aft (standard gear; Ref, see Figure 32-1)		
	C239-16	Strut Assembly – Aft (Extended gear. Ref, not shown; see Figure 32-1.)		
	2 D040-1	Cowling Assembly – Aft (Ref, see Figure 53-5)		
	3 D210-3	Nut	X	1
	4 NAS620-10L	Washer	X	2
	5 F411-10	Extension	X	1
	6 NAS1351-3-10P	Screw	X	1
	7 C082	Fairing Assembly – Aft (RH, Ref; see Figure 32-9)		
8	—	Tow Cart* (Ref)		
NOTES * Refer to MT950 Ground Handling Cart Operating Instructions, Maintenance Manual, and Illustrated Parts Catalog online at https://robinsonheli.com .				



When upgrading early-revision cylinders (marked DOT-E 10915-4500) to later revision (marked DOT-E 10915-4945), replace D669-5 Rev "A" straps with D669-5 Rev "B" (or subsequent) straps. To replace strap, drill out four existing attaching rivets and install new strap with four NAS1919B04S02 (or NAS9301B-4-02) rivets in original rivet holes.

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		POP-OUT FLOATS – CYLINDER ASSEMBLY INSTALLATION		
32-13-1	MS27039C0806	Screw	X	4
2	D669-3	Strap	X	1
3	MS21042L08	Nut	X	2
4	NAS1149FN816P	Washer	X	2
5	MS35489-6	Grommet	X	1
6	D676-1	Cable (Ref, see Figure 32-17)		
7	MS27039C1-12	Screw	X	2
8	D761-2	Cover	X	1
9	MS27039C0805	Screw	X	4
10	MT545-1	Pin Assembly	X	1
11	MS21042L3	Nut (for earlier R44s)	X	2
12	NAS1149F0332P	Washer ([4] required on earlier R44s when item 11 is installed) . .	X	2
13	D761-1	Support Assembly (revision "C" and higher)	X	1
14	C130-26	Spacer	X	2
15	AN735-3	Clamp	X	2
16	MS3367-4-9	Ty-Rap	X	1
17	D669-5	Strap	X	1
18	D679-3*	Cylinder Assembly (filled)	X	1
	D679-3R*	D679-3 Cylinder Assembly (filled; overhaul exchange)	X	1
	D679-4*	Cylinder Assembly (empty)	X	1
	D679-4R*	D679-4 Cylinder Assembly (empty; overhaul exchange)	X	1
19	D669-1	Cradle Assembly (Incl item 20)	X	1
20	A226-11	Trim	X	A/R
21	D674-1	Hose	X	1
22	D682-6	Decal (cylinder pressure limits)	X	1
23	D669-4	Brace	X	2
24	A701-5	Tape	X	A/R
25	MS20470AD3	Rivet	X	8
26	MS20470AD4	Rivet	X	6
		* * *		
27	MT546-2**	Adapter Assembly – Filler (includes MS28778-2 packing)	X	1
28	MS28778-2**	Packing	X	1
29	KI-151**	Pop-Out Float Cylinder Bleed-Off Kit	X	1
30	KI-175	Cylinder Replacement Installation Kit (Incl items 1, 3, 4, 7 thru 9, and 12 thru 16; not shown)	X	1
NOTES * When replacing D679-1 Cylinder Assembly, also order KI-175 installation kit. ** Not shown; see Figure 99-13.				



When upgrading early-revision cylinders (marked DOT-E 10915-4500) to later revision (marked DOT-E 10915-4945), replace D669-5 Rev "A" straps with D669-5 Rev "B" (or subsequent) straps. To replace strap, drill out four existing attaching rivets and install new strap with four NAS1919B04S02 (or NAS9301B-4-02) rivets in original rivet holes.

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		POP-OUT FLOATS – TUBE ASSEMBLY COMPONENTS*		
32-25-1	C950-2	Float Tube Assembly – RH (Incl items 2, 3, 5, 13, 15, and 16) . .	O	1
	C950-1	Float Tube Assembly – LH (Incl items 2, 3, 5, 13, 15, and 16; not shown)	O	1
2	20525**	Inlet Check Valve (Ref)	O	1
3	20325**	Inlet Check Valve (Ref)	O	1
4	AN824-8D	Tee	X	2
5	20246**	Inlet Check Valve (Ref)	O	3
6	D674-7	Hose Assembly – LH and RH (Incl item 11)	X	1
7	D674-6	Hose Assembly – LH and RH (Incl item 12)	X	2
8	D674-5	Hose Assembly – LH and RH (Incl item 12)	X	2
9	D674-4	Hose Assembly – LH and RH (Incl item 12)	X	2
10	D674-3	Hose Assembly – LH and RH (Incl item 12)	X	2
11	B158-12	Heat Shrink (black, 0.75 in. dia.)	X	A/R
12	B158-16	Heat Shrink (black, 1.00 in. dia.)	X	A/R
13	AN929-8	Cap	X	1
14	B-51025**	Wrench	O	1
15	B-51209**	Valve – Top-Off	O	5
16	B-51019-4**	Valve – Pressure Relief	O	5
17	KI-83-4	Pop-Out Float Repair Kit	X	1
NOTES * Five-chamber floats. ** Apical Industries, Inc. part no.				

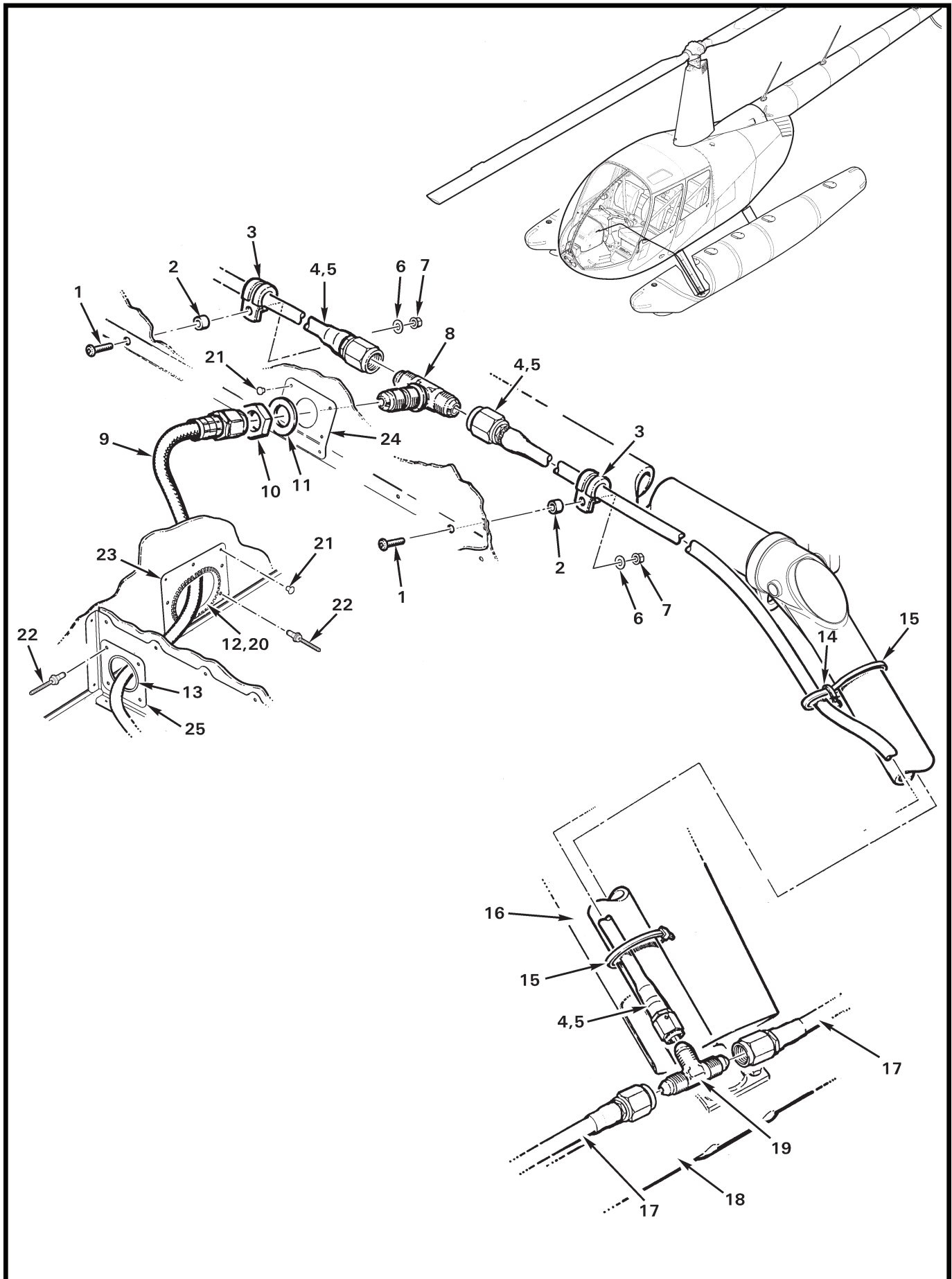


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		POP-OUT FLOATS – HOSES INSTALLATION*		
32-27-1	MS27039C1-12	Screw	X	2
2	C130-26	Spacer	X	2
3	MS21919WDG10	Clamp	X	2
4	D674-2	Hose Assembly (Incl item 5)	X	2
5	B158-16	Heat Shrink (black, 1.00 in. dia.)	X	A/R
6	NAS1149F0332P	Washer	X	2
7	MS21042L3	Nut	X	2
8	AN834-8D	Tee	X	1
9	D674-1	Hose (from cylinder assembly; see also Figure 32-13)	X	1
10	AN924-8D	Nut	X	1
11	NAS1149F1290P	Washer	X	1
12	MS21266-1N	Grommet (install using item 20)	X	A/R
13	MS35489-20	Grommet	X	1
14	MS3367-5-9	Ty-Rap (or MS3367-7-9; used as a spacer at this location, LH and RH)	X	2
15	MS3367-7-9	Ty-Rap	X	A/R
16	C082-53	Fairing Assembly (Ref, forward LH; see Figure 32-9)		
17	D674-6	Line Assembly (see also Figure 32-23)	X	1
18	C014-25	Skid Tube Assembly – (LH, Ref)		
19	AN824-8D	Tee (LH and RH)	X	2
20	B270-8qt	Adhesive	X	A/R
21	MS20470AD3	Rivet	X	9
22	NAS1919B04S01	Rivet	X	8
23	D673-1	Doubler	X	1
24	D673-4	Doubler	X	1
25	D673-2	Doubler	X	1
NOTES * C014-28 landing gear shown. C014-17 landing gear hose installation is identical.				

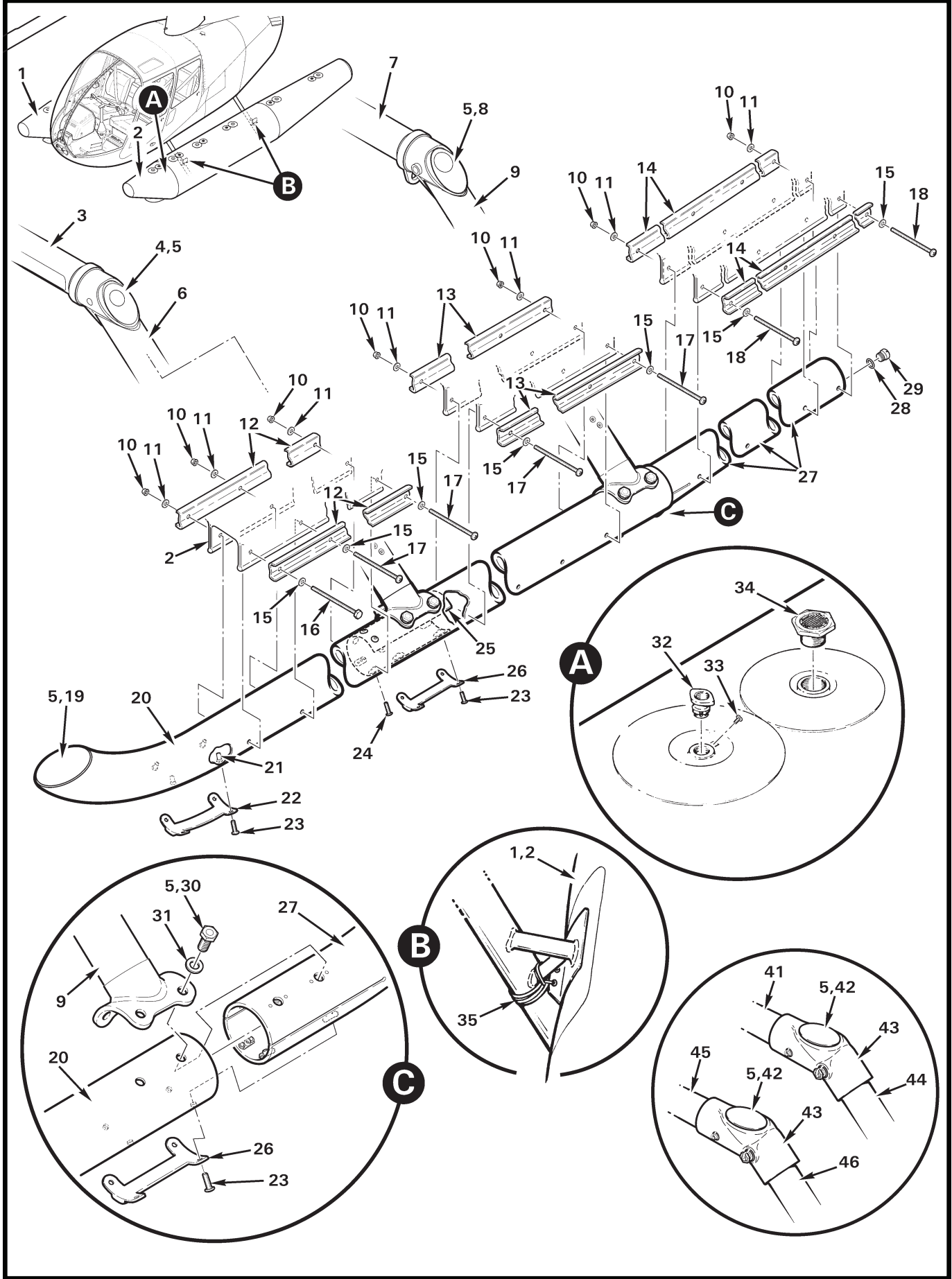


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		F004-2 EMPENNAGE ASSEMBLY		
53-37-1	F004-2*	Empennage Assembly (Incl items 2 thru 5, 12 thru 15, 41 thru 43, and 45)	X	1
2	C042-1	Stabilizer – Upper Vertical (does not include items 12, 13, and 15)	X	1
3	C130-9	Spacer	X	8
4	NAS6604-6	Bolt	X	8
5	F044-1*	Mount Assembly – Vertical Stabilizers (Incl items 17, 19, 33, 60, and 61)	X	1
8	NAS6606-47	Bolt (or NAS6606-48)	X	2
7	NAS1149F0632P	Washer	X	2
8	C023-1, -4, -14, & -15	Tailcone Assembly (Ref, see Figure 53-25)		
9	NAS1149F0663P	Washer (Under nut, as required to meet torque requirements per R44 MM § 23-30.)	X	A/R
10	D210-6	Nut	X	2
11	B330-19	Palnut	X	2
12	A130-14	Spacer	X	1
13	MS20470AD4	Rivet	X	4
14	MS35206-228	Screw	X	1
15	C554-2	Clip – Upper (Vertical Stabilizer)	X	1
16	MS35489-4	Grommet	X	2
17	C529-1	Mount Assembly – Tail Light	X	1
18	01-0771554-01**	Light Assembly – Tail Light (Ref, see Figure 33-7)		
19	MS20470AD3	Rivet	X	2
20	MS21042L08	Nut	X	2
21	NAS1149FN816P	Washer	X	2
22	B161-2	Spirap	X	A/R
23	MS3367-5-0	Ty-Rap	X	A/R
24	MS21919WDG3	Clamp	X	1
25	MS27039C0806	Screw	X	2
26	B263-11	Housing	X	1
	B263-2	Socket	X	1
27	B263-10	Housing	X	1
	B263-1	Pin	X	1
28	B263-13	Housing	X	2
	B263-2	Socket	X	4

NOTES * May only be installed if F955-1 or -6 bracket is installed on tailcone, see Figure 53-25.

** Whelen part number.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		F004-2 EMPENNAGE ASSEMBLY (Cont'd)		
53-37-29	B263-12	Housing	X	1
	B263-1	Pin	X	2
30	B260-3	Terminal	X	1
31	MS21919WDG2	Clamp	X	1
32	90295A075	Washer	X	1
33	D049-8	Wire Harness Assembly – Tail Light (includes items 16, 22, 27, 28 [1], 30, 32, and wires; assembled)	X	1
34	C148	Bulkhead Assembly (Ref)		
35	D082-1	Tube Assembly – Tail Rotor Guard Mount (lightly coat mating surface to item 48 with wet primer)		
36	MS27039C1-07	Screw	X	4
37	D081-1	Spacer (lightly coat mating surface to item 35 with wet primer prior to installation)	X	1
38	NAS1149F0332P	Washer	X	4
39	D210-3	Nut	X	2
40	NAS6603-16	Bolt (install using wet primer on shank)	X	2
41	C554-1	Clip – Lower (Vertical Stabilizer)	X	1
42	NAS1149FN616P	Washer	X	1
43	MS21042L06	Nut	X	1
44	C654-2	Decal – "DANGER"	X	2
45	C043-1	Stabilizer – Lower Vertical (includes items 58 and 59; does not include items 13, 41, 44, and 57)	X	1
46	NAS1149F0432P	Washer	X	2
47	D210-4	Nut	X	2
48	D079-1	Tail Rotor Guard Assembly (Includes item 54; does not include items 35 and 37. Lightly coat inside top of guard with wet primer prior to installing item 35. Seal around seam with primer after installation.)	X	1
49	D081-4	Block Assembly	X	1
50	NAS1351-4-51P	Screw	X	1
51	NAS1352-3-14P	Screw	X	1
52	D081-2	Block – Cap	X	1
53	NAS1351-4-36P	Screw	X	1
54	C654-18	Decal – "NO HAND HOLD"	X	1
55	C470-3	Spacer	X	1
56	C470-3	Spacer (Ref; revision I and prior no longer available)		
57	C470-1	Tail Skid	X	1
NOTES				
				Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		C004-2 EMPENNAGE ASSEMBLY		
53-41-1	C004-2*	Empennage Assembly (Includes items 2 thru 5, 14 thru 17, 23, 42 thru 44, and 47, does not include item 45. Also order item 64 as required.)	X	1
2	C042-1	Stabilizer – Upper Vertical (does not include items 14, 15, and 17)	X	1
3	C130-9	Spacer	X	8
4	NAS6604-6	Bolt	X	8
5	C044-1*	Stabilizer – Horizontal (Incl items 6, 7, 18, 20 thru 23, and 35)	X	1
6	MS20470AD3	Rivet	X	10
7	D292-2	Rib (inboard; seal around joint using item 23)	X	1
8	NAS6606-47	Bolt (or NAS6606-48)	X	2
9	NAS1149F0632P	Washer	X	2
10	C023	Tailcone Assembly (Ref)		
11	NAS1149F0663P	Washer (Under nut, as required to meet torque requirements per R44 MM § 23-30.)	X	A/R
12	D210-6	Nut	X	2
13	B330-19	Palnut	X	2
14	A130-14	Spacer	X	1
15	MS20470AD4	Rivet	X	4
16	MS35206-228	Screw	X	1
17	C554-2	Clip – Upper Vertical Stabilizer	X	1
18	C529-1	Mount Assembly – Tail Light	X	1
19	01-0771554-01**	Light Assembly – Tail Light (Ref, see Figure 33-7)		
20	NAS9301B-4-02	Rivet (or NAS1919B04S02)	X	3
21	NAS9301B-4-01	Rivet (or NAS1919B04S01)	X	14
22	D292-3	Rib (outboard; seal around joint using item 23)	X	1
23	B270-1	Sealant	X	1
24	MS21042L08	Nut	X	2
25	NAS1149FN816P	Washer	X	2
26	MS3367-5-9	Ty-Rap	X	4
27	B161-2	Spirap	X	A/R
28	MS21919WDG3	Clamp	X	1
29	MS27039C0806	Screw	X	2
30	B264-11	Housing	X	1
	B264-2	Socket	X	1

NOTES * May not be installed if F955-1 or -6 bracket is installed on tailcone, see Figure 53-25.

** Whelen part number.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		C004-2 EMPENNAGE ASSEMBLY (Cont'd)		
53-41-31	B264-10	Housing	X	1
	B264-1	Pin	X	1
32	MS21919WDG2	Clamp	X	1
33	B260-3	Terminal	X	1
34	MS35489-4	Grommet	X	2
35	D049-3	Wire Harness Assembly – Tail Light (Includes items 27, 30, 34, B264-1 pin, [2] B264-2 sockets, B264-13 housing, 90295A075 plastic washer, and wires; assembled. Replaced by D049-8, see Figure 53-37.)	X	1
36	MS27039C1-07	Screw	X	4
37	D082-1	Tube Assembly – Tail Rotor Guard Mount (lightly coat mating surface to item 46 with wet primer)	X	1
38	D081-1	Spacer (lightly coat with wet primer prior to installation)	X	2
39	NAS1149F0332P	Washer	X	4
40	NAS6603-16	Bolt (install using wet primer)	X	2
41	D210-3	Nut	X	2
42	C554-1	Clip – Lower Vertical Stabilizer	X	1
43	NAS1149FN616P	Washer	X	1
44	MS21042L06	Nut	X	1
45	C654-2	Decal – “Danger”	X	2
46	D079-1	Tail Rotor Guard (Includes item 55. Lightly coat inside top of guard with primer before installing item 37. Seal around seam with primer after installation.)	X	1
47	C043-1	Stabilizer – Lower Vertical (includes items 23, 62, and 63; does not include items 42, 45, and 58)	X	1
48	NAS1149F0432P	Washer	X	2
49	D210-4	Nut	X	2
50	D081-4	Block Assembly	X	1
51	NAS1351-4-51P	Screw	X	1
52	NAS1352-3-14P	Screw	X	1
53	D081-2	Block – Cap	X	1
54	NAS1351-4-36P	Screw	X	1
55	C654-18	Decal – “No Hand Hold”	X	1
56	C470-3	Spacer	X	1
57	C470-3	Spacer (Ref, revision I and prior no longer available)		
58	C470-1	Tail Skid	X	1
59	D097-11 *	Stabilizer – Horizontal (Incl items 5 and 60)	X	1
NOTES * ENG ships only.				
				Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
63-1-1	MAIN ROTOR GEARBOX AND MAST ASSEMBLY			
	C006-7*	Main Rotor Gearbox and Mast Assembly (Includes items 3 thru 11, 13 thru 59, 65, 66, 73, 76, 77, 79, and 83 thru 87; also items 8, and 12 thru 14 from Figure 29-17. Includes rotor brake, yoke, slider tube, and hydraulic pump.)	X	1
	C006-8*	Main Rotor Gearbox and Mast Assembly (Includes items 3, 7 thru 9, 11, 13 thru 38, 65, 66, 73, 76, 77, 79, 83, and 87; also items 8, and 12 thru 15 from Figure 29-17. <u>Does not</u> include rotor brake, yoke, slider tube, or hydraulic pump.)	X	1
	C006-8R*	C006-8 Main Rotor Gearbox and Mast Assembly (overhaul exchange)	X	1
	C006-6*	Main Rotor Gearbox and Mast Assembly (Ship S/N 10001 thru 13838, and ship S/N 0001 thru 2408 with R8206 Upgrade Kit. Includes items 3, 7 thru 9, 11 thru 17, 19 thru 38, 65, 66, 73, 74, 76, 77, 79, 83, and 87; also items 8, and 12 thru 15 from Figure 29-19. <u>Does not</u> include rotor brake, yoke, slider tube, or hydraulic pump.)	O	1
	C006-1 or -3	Main Rotor Gearbox and Mast Assembly (Ref, no longer available. Superseded by C006-6 assembly.)		
	R8206	C283-3 Mast Tube Upgrade Kit (For ship S/N 0001 thru 9999 with C283-1 Mast Assembly originally installed.)	X	1
	2 C284-1	Tube Assembly – Swashplate (for use with earlier main rotor gearboxes)	X	1
	C284-2	Tube Assembly – Swashplate (May only be installed if mast assembly is equipped with C280-2 sleeve [identified by 0.5-inch wide notch at forward side atop mast assembly].) . .	X	1
	3 C251-2	Shaft – Main Rotor Drive	O	1
	C251-1	Shaft – Main Rotor Drive (Ref, not shown. Superseded by C251-2.)		
	4 NAS6603-24	Bolt ([6] required with item 80)	X	4
	5 NAS1149F0332P	Washer	X	14
	6 D210-3	Nut	X	6
	7 F283-3	Mast Assembly (Incl item 83)	O	1
	8 B563-2	Sight Gage	X	1
	9 A215-020	O-Ring	X	1
	10 NAS6603-40	Bolt	X	2
	11 NAS1149F0432P	Washer	X	12
	12 MS20995C32	0.032 in. dia. Safety Wire	X	A/R
	13 C257-2	Cover (non-hydraulic ship, or when item 85 is removed)	X	1
	14 A215-222	O-Ring	X	1
	15 F110-4	Telatemp (temperature recorder, 220°–270°F)	X	2
NOTES * See Figure 99-15 for shipping crate.				
				Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		MAIN ROTOR GEARBOX AND MAST ASSEMBLY (Cont'd)		
63-1-16	D210-4	Nut	X	16
17	A141-11	Washer	X	16
18	B049-3	Harness Assembly	X	1
19	C049-2	Harness Assembly	X	1
20	C264-2	Housing (Rev. K and subsequent)	O	1
	C264-1	Housing (Ref; Rev. J and prior, no longer available)		
21	A215-382	O-Ring (use only with C263-2 sump; install using item 88)	X	1
	C215-279	O-Ring (use only with C263-1 sump; install using item 88)	X	1
22	C263-2	Sump (requires A215-222 o-ring)	O	1
	C263-1	Sump (requires C215-279 o-ring)	O	1
23	A215-017	O-Ring	X	2
24	B566-1 *	Chip Detector ("quick release", includes items 26, 74, and 77) ..	X	1
25	C049-4	Harness Assembly	X	1
26	—	Nut	O	1
27	AN960PD416L	Washer (or A141-0XX; XX = thickness in thousandths in.) . . .	X	A/R
28	NAS1304-15	Bolt (vary length as required)	X	12
29	AN814-8D	Filler Plug	X	1
30	A215-029	O-Ring	X	1
31	C266-1	Spacer	X	1
32	C966-3	Seal	X	1
33	A215-156	O-Ring	X	1
34	C270-1	End Cover	X	1
35	NAS1149F0463P	Washer	X	17
36	NAS1352-4-12	Screw ([6] required for C006-3 assembly)	X	3
37	C244-1	Bracket	X	1
38	C049-5	Harness Assembly – Overtemp Switch	X	1
39	NAS6603-8	Bolt	X	1
40	MS24566-1B	Pulley (or AN210-1A)	X	1
41	D117-1	Guard	X	1
42	A130-41	Spacer	X	2
43	C130-3	Spacer	X	2
44	C006-2	Rotor Brake Assembly (see Figure 63-7)	X	1
45	D110-1	Arm Assembly – Upper	X	1
46	D774-4	Spring (Associated Spring part no. C0420-063-2000S)	X	1
47	D123-1	Arm Assembly – Lower	X	1
NOTES * Requires MT054-1 tool to drain gearbox.				
				Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		MAIN ROTOR GEARBOX AND MAST ASSEMBLY (Cont'd)		
63-1-48	NAS428-3-14	Bolt	X	1
49	D049-4	Harness Assembly	X	1
50	C130-4	Spacer	X	1
51	B320-2	Sender Assembly (Incl item 52)	X	2
52	—	Nut	O	4
53	D114-1	Bracket	X	1
54	NAS1352-4-30	Screw	X	3
55	B570-1	Magnet Assembly	X	2
56	C908-1	Yoke Assembly (Includes item 55. Coat splines of C146-2 pinion with B270-21 protectant before installing yoke assembly.)	X	1
57	C141-10	Washer	X	1
58	MS24665-300	Cotter Pin	X	1
59	AN320-8	Nut (install with B270-11 on threads)	X	1
60	D210-10	Nut (install with A257-9 anti-seize on threads)	X	4
61	A141-21	Washer	X	4
62	C020-1	Upper Frame (Ref)		
63	C796-2	Shim (3 maximum per aft pad)	X	A/R
64	A796-1	Shim (3 maximum per fwd pad)	X	A/R
65	C653-3*	Mount	X	2
66	A653-2*	Mount (supersedes A653-1; if replacing a -1 mount, replace both forward mounts)	X	2
67	C796-3	Spacer	X	2
68	A267-1	Washer	X	4
69	NAS1149F1063P	Washer	X	A/R
70	A650-4	Fitting	X	4
71	C130-21	Spacer	X	2
72	C345-1	Strut Weldment (Ref)		
73	A654-56	Decal (Ref; main rotor gearbox fill/oil instructions. No longer available. Superseded by F654-13 decal. See Figure 11-5.)		
74	A130-14	Spacer	X	1
75	A257-22**	Oil – Gear (1gallon)	X	A/R
	A257-22QT**	Oil – Gear (1quart)	X	A/R
	A257-2**	Oil – Gear (1gallon)	X	A/R
	A257-2LT**	Oil – Gear (1liter)	X	A/R
NOTES * Lubricate with water or A257-8 rubber lubricant during installation. ** Use correct gearbox oil per R44 Service Letter SL-73.				
				Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		MAIN ROTOR GEARBOX AND MAST ASSEMBLY (Cont'd)		
63-1-76	NAS1352-4-16	Screw	X	6
77	012C	O-Ring	X	2
78	C261-1	Mast Fairing Assembly (Ref, see also Figure 53-11)	X	2
79	C747-1	Baffle Assembly	X	1
80	C283-1	Mast Assembly (Ref; earlier gearboxes. Use with item 81.)		
81	B115-1	Bearing (install using item 82)	X	2
82	B270-10	Adhesive	X	A/R
83	C648-2	Bearing – Journal	X	2
84	D500-1	Pump (Ref, see Figure 29-19 for installation)		
85	NAS1149D0316J	Washer	X	2
86	NAS1149F0432P	Washer (or NAS1149F0463P to fill gap)	X	A/R
87	C146-5	Gear Set	O	1
	C146-1	Gear Set (Ref, earlier R44's)		
88	A257-19	Lubricant	X	1
89	—	Data Plate (C146 Gear Set, Ref)		
90	—	Data Plate (MRGB Housing, Ref)		
91	—	Data Plate (C006 MRGB, Ref)		
		* * *		
92	MS20074-04-04	Bolt (earlier non-hydraulic R44s)	X	4
93	A7260	Chip Detector (Ref; no longer available)		
94	AS111	O-Ring (use only with item 92)	X	1
95	C647-1	Bearing (main rotor shaft upper bearing, not shown)	O	1
NOTES				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		FORWARD FLEX PLATE INSTALLATION		
63-13-1	C908-1	Yoke (Ref)		
2	NAS6606-5	Bolt	X	4
3	NAS1149F0632P	Washer	X	12
4	C947-1	Flex Plate Assembly	X	1
5	D210-6	Nut	X	6
6	B330-19	Palnut	X	4
7	C191-1	Block	X	1
8	NAS6606-31	Bolt	X	2
9	C553-1	Block	X	1
10	C907-1	Yoke (shaft length – 2.76 in.)	X	1
	C907-2	Yoke (shaft length – 2.90 in.)	X	1
11	NAS1149F0632P*	Washer	X	A/R
NOTES * Determine shim washers required for sheave alignment per R44 Maintenance Manual Section 7.230.				

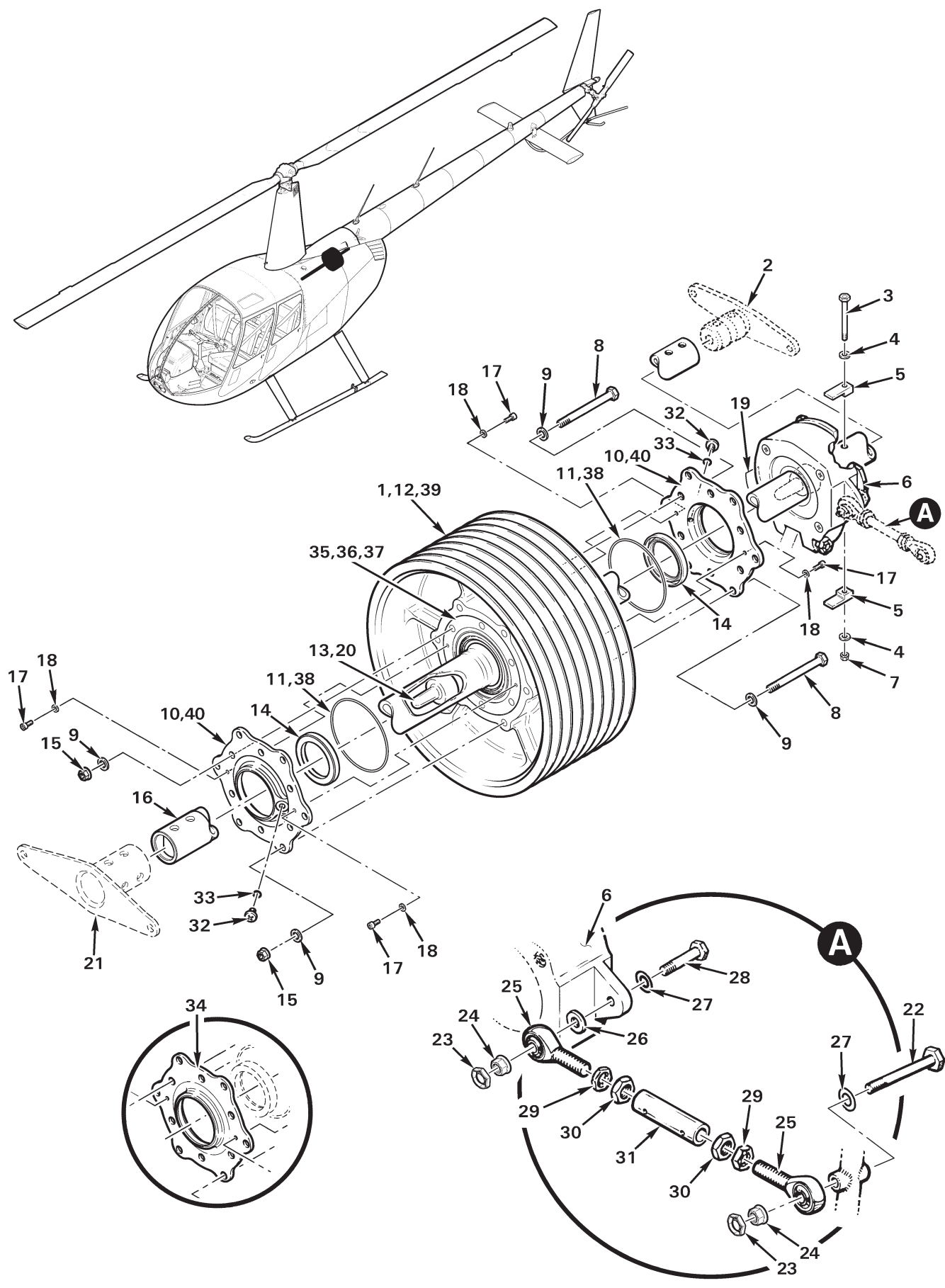


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
63-15-1	C018-4	Clutch Assembly (Anodized sheave. Includes items 3 thru 11, 12 [C170-2], 13 thru 20, 32, 33, 35 and C188-3 sprag clutch.)	X	1
	C018-4R	C018-4 Clutch Assembly (Overhaul exchange; requires core deposit. Includes new C166-5 shaft.)	X	1
	C018-5	Clutch Assembly (Metalized sheave. Includes items 3 thru 11, 12 [C170-3], 13 thru 20, 32, 33, 35 and C188-3 sprag clutch.)	X	1
	C018-5R	C018-5 Clutch Assembly (Overhaul exchange; requires core deposit. Includes new C166-5 shaft.)	X	1
	2 C195	Yoke (Ref, see Figure 65-1)		
	3 NAS6603-28	Bolt	X	1
	4 NAS1149F0332P	Washer	X	2
	5 C191-5	Stop	X	2
	6 C184-2	Bearing Assembly – Upper	X	1
	C184-2R	C184-2 Bearing Assembly – Upper (overhaul exchange)	X	1
	7 MS21042L3	Nut	X	1
	8 NAS6605-42	Bolt	X	12
	9 NAS1149F0532P	Washer	X	24
	10 C168-5	Retainer (Incl items 32 and 33)	X	2
	11 A215-152	O-Ring (used <u>only</u> with items 35 and 36)	X	2
	12 C170-2	Sheave – Upper (anodized)	O	1
	C170-3	Sheave – Upper (metalized)	O	1
	13 C967-1	Plug	O	2
	14 C966-5	Seal	X	2
	15 MS21042L5	Nut	X	12
	16 C166-4	Shaft – Clutch (Ref)	O	1
	17 NAS1352-08LE6P	Screw	X	4
	18 NAS620-8	Washer	X	4
	19 110-3	Telatemp (temperature recorder 180°-230°F)	X	1
	20 A257-4	Oil – Type “A” ATF (Dexron III)	X	A/R
	21 C907	Yoke (Ref, see Figure 63-13)		
	22 NAS6604-21	Bolt	X	1
NOTES				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CLUTCH ASSEMBLY (Cont'd)		
63-15-23	B330-13	Palnut	X	2
24	D210-4	Nut	X	2
25	A101-4	Rod End	X	2
26	MS20002-4	Washer	X	1
27	NAS1149F0432P	Washer	X	2
28	NAS6604-11	Bolt	X	1
29	B330-16	Palnut	X	2
30	AN316-5R	Nut	X	2
31	A344-2	Strut	X	1
32	B289-3	Screw (Incl item 33)	X	2
33	—	O-Ring	O	2
34	C168-4	Retainer (Ref; superseded by item 10)		
35	C167-6	Housing (Ref; part no. stamped on either side of face)		
36	C167-5	Housing (Ref; part no. stamped on either side of face)		
37	C167-3	Housing (Ref; superseded by item 36)		
38	A215-042	O-Ring (used <u>only</u> with item 37)	X	2
39	C018-2	Clutch Assembly (Ref; no longer available. Anodized sheave. Superseded by item 1 [C018-4]. Includes items 3 thru 11, 12 [C170-2], 13 thru 20, 32, 33, 36 and C188-3 sprag clutch.)	O	1
	C018-3	Clutch Assembly (Ref; no longer available. Metalized sheave. Superseded by item 1 [C018-5]. Includes items 3 thru 11, 12 [C170-3], 13 thru 20, 32, 33, 36 and C188-3 sprag clutch.)	O	1

40	KI-202	Retainer Upgrade Kit (Incl items 10, 14, 32, and 38) . . .	X	1
NOTES				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
TAIL ROTOR GEARBOX SEALS				
65-11-1	MS24665-300	Cotter Pin	X	1
2	C116-1	Yoke (Coat splines of input shaft with B270-21 protectant before installing yoke.)	X	1
3	AN320-8	Nut	X	1
4	A141-10	Washer	X	1
5	C112-1	Cap	X	1
6	A215-140	O-Ring (install using item 7)	X	1
7	A257-22*	Oil – Gear (1gallon)	X	A/R
	A257-22QT*	Oil – Gear (1quart)	X	A/R
	A257-2*	Oil – Gear (1gallon)	X	A/R
	A257-2LT*	Oil – Gear (1quart)	X	A/R
8	A966-3	Seal	X	1
9	C141-2	Washer (Ref, between cap and input cartridge)	O	1
10	C266-2	Spacer	X	1
11	C110-1	Input Cartridge (Ref)		
12	MS20074-04-06	Bolt	X	8
13	MS20995C032	0.032 in. dia. Safety Wire	X	A/R
14	NAS1149F0432P	Washer	X	8
15	A215-024	O-Ring (install using item 7)	X	1
16	C109-2	Housing (Ref)		
17	C107-2	Shaft - Output (Ref)		
	C107-1	Shaft - Output (Ref)		
18	C966-2	Seal	X	1
19	A215-133	O-Ring (install using item 7)	X	1
20	C112-2	Cap	X	1
21	C021-1	Tail Rotor Gearbox Assembly (Ref; Incl items 1 thru 20)		
NOTES * Use correct gearbox oil per R44 Service Letter SL-73.				

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CHAPTER 67

FLIGHT CONTROLS

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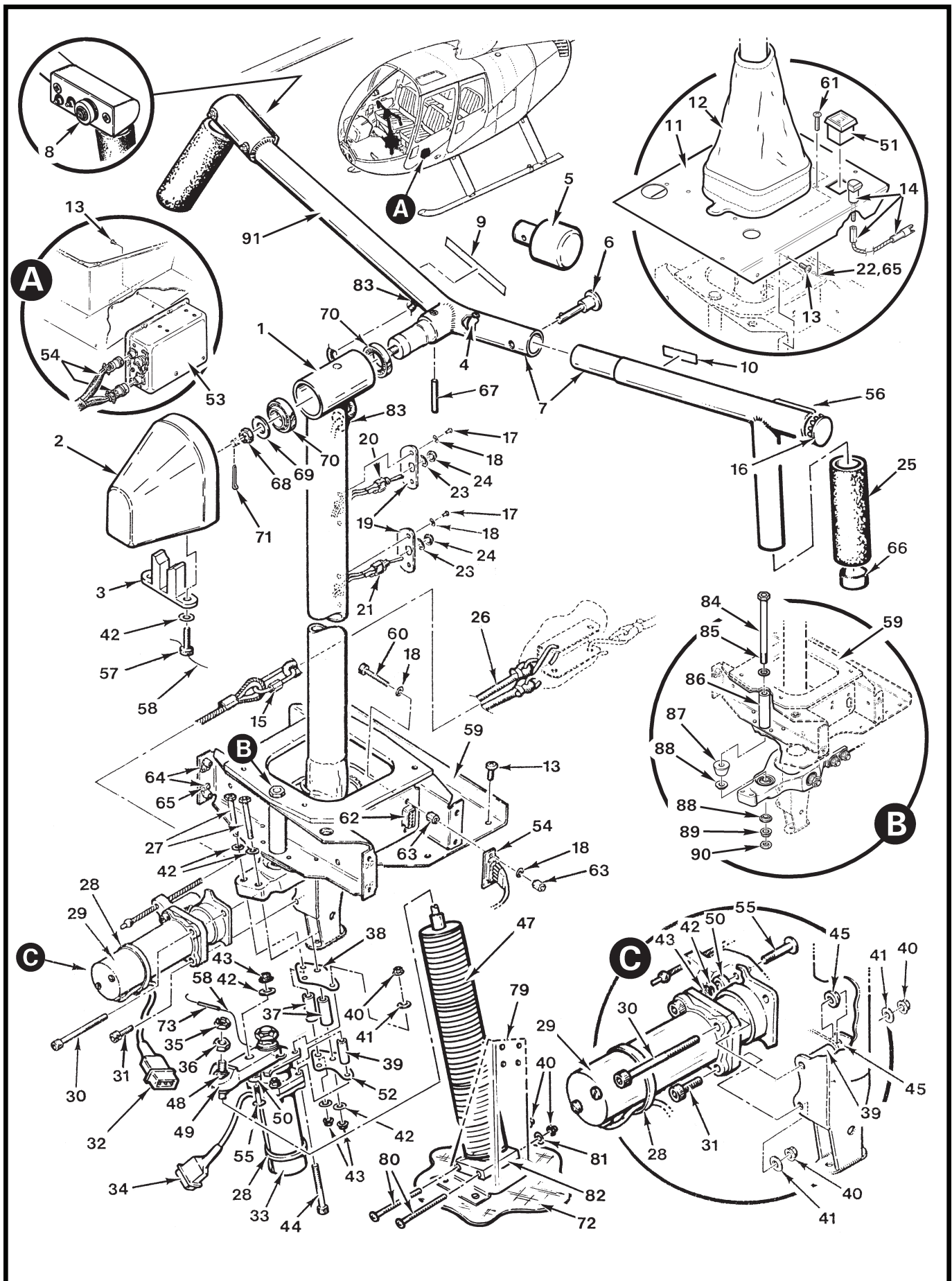


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		PUSH-PULL TUBE ASSEMBLIES		
67-49-1	D173-2	Rod End	X	2
2	B330-19	Palnut	X	2
3	AN316-6R	Nut	X	2
4	C121-31	Push-Pull Tube Assembly (Includes items 1 thru 3. Supersedes C121-25; must use C121-31 on R44 II.)	X	3
5	NAS6605-9	Bolt	X	3
6	NAS1149F0532P	Washer	X	6
7	D200-1 *	Clevis (Ref)	X	3
8	D210-5	Nut	X	3
9	B330-16	Palnut	X	3
10	B330-19 *	Palnut (Ref)		
NOTES * See also Figure 29-3 and Figure 29-1.				

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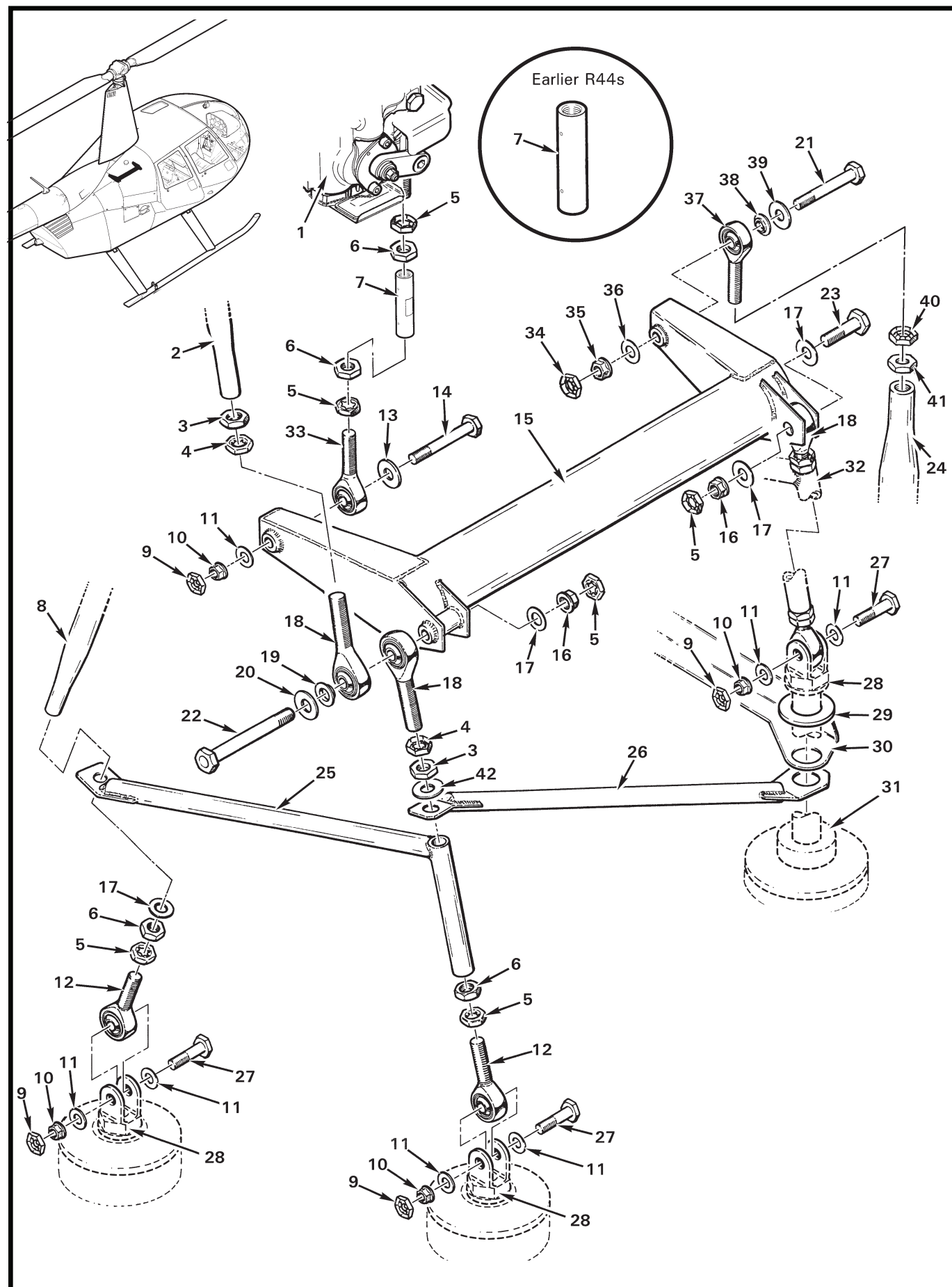


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE INSTALLATION		
67-61-1	NAS6604-24*	Bolt	X	1
2	AN970-4**	Washer (A/R for balance)	X	A/R
3	A255-1**	Counter Weight (1.10 in. O.D.)	X	A/R
	A255-2**	Counter Weight (1.90 in. O.D.)	X	A/R
4	C203-5	Yoke Assembly (includes item 13)	X	2
5	NAS1149F0432P	Washer (or NAS1149F0463P as required for proper thread engagement)	X	A/R
6	D210-4	Nut	X	2
7	B330-13	Palnut	X	2
8	NAS6604-24	Bolt	X	1
9	NAS1149F0432P	Washer	X	2
10	B330-16	Palnut	X	13
11	D210-5	Nut	X	13
12	NAS1149F0563P	Washer	X	2
13	A210-1	Key	X	1
14	C648-2	Bearing – Journal (install wet; see R44 MM § 23-75 for approved primer)	X	1
15	NAS6605-28	Bolt	X	2
16	C141-19	Washer	X	8
17	C117-67	Shim (thickness = 0.016 in.)	X	A/R
	C117-68	Shim (thickness = 0.020 in.)	X	A/R
	C117-69	Shim (thickness = 0.025 in.)	X	A/R
18	C105-6	Journal	X	8
19	C204-3	Arm (upper 2.87 inches long)	X	1
20	NAS6605-31	Bolt	X	4
21	A205-7	Fork Assembly (includes item 14 [2], install using item 51)	X	2
22	MS3367-7-9	Ty-Rap	X	1
23	C480-1	Boot	X	1
24	MS3367-6-0	Ty-Rap	X	1
25	NAS6605-18	Bolt	X	2
26	C141-1	Washer	X	6
27	NAS1149F0532P	Washer	X	9
28	C115-1	Spacer	X	14
29	C016	Blade Assembly – Main Rotor (Ref)		
NOTES * Select bolt length which, after correct torque is applied, exposes 2 to 4 threads beyond nut. ** For main rotor balance adjustment, refer to R44 MM § 10.231 Part C.				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE INSTALLATION (Cont'd)		
67-61-30	AN316-6R	Nut	X	2
31	B330-19	Palnut	X	2
32	D173-3	Rod End	X	2
33	C258-1	Pitch Link Assembly (Incl items 34 thru 49, and 50)	X	2
34	MS20995C32	0.032 in. dia. Safety Wire	X	A/R
35	A255-3	Counter Weight	X	2
36	NAS1352N08-4	Screw	X	2
37	B769-2	Bracket	X	1
38	C204-2	Arm – Lower (2.520 inches long)	X	1
39	C017-6	Swashplate Assembly (Incl items 36, 37, 40, 41, 42, 44, and 53)	X	1
	C017-6R	C017-6 Swashplate Assembly (Overhaul exchange; requires core deposit.)	X	1
40	C199-2	Swashplate Assembly – Upper (Ref)		
41	C769-2	Interrupter	X	1
42	MS20470AD3	Rivet	X	2
43	NAS6605-17	Bolt	X	4
44	F198-1	Swashplate Assembly – Lower (Ref)		
45	D173-3	Rod End	X	1
46	B330-19	Palnut	X	1
47	AN316-6R	Nut	X	1
48	C258-2	Fitting	X	1
49	21FKF-813	Nut	X	1
50	C258-4	Link Assembly (includes C258-3 link and items 45 thru 47)	X	1
51	B270-13	Sealant (to fill cavity in item 21)	X	A/R
52	C648-2	Bearing (Ref)		
53	C647-12	Bearing Set (life-limited component, see MM § 3.100; not shown)	O	1

54	KI-6604	R44-series & R66 C017-5 Swashplate Installation Parts Kit Instructions (Contains parts to install C017-6 swashplate assembly and supersedes R7983 kit. Does not include swashplate or C284 tube assembly	X	A/R
NOTES				

CHAPTER 71

POWERPLANT

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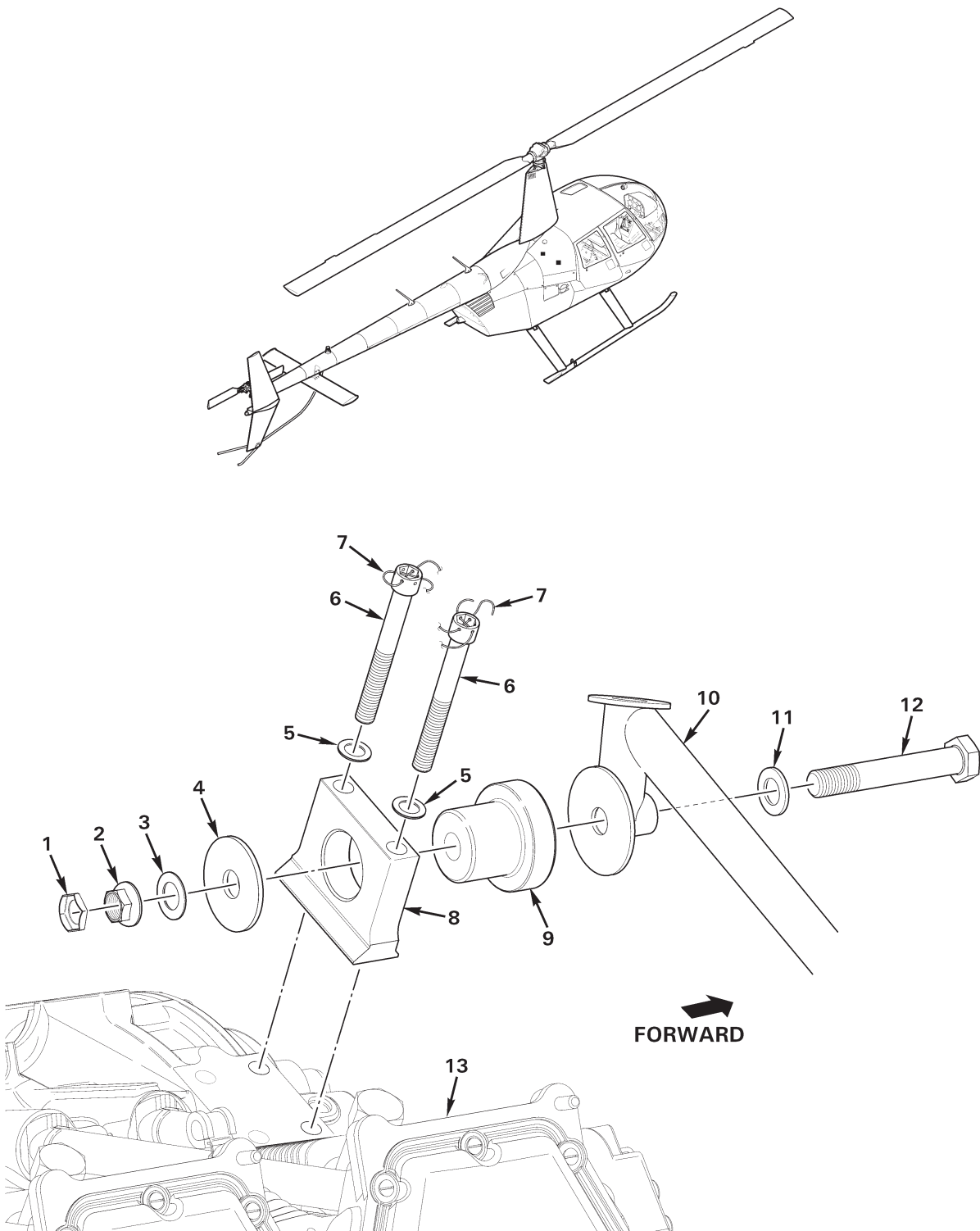


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		FORWARD ENGINE MOUNTS		
71-1-1	B330-24	Palnut	X	2
2	D210-8	Nut	X	2
3	NAS1149F0832P	Washer	X	2
4	C141-9	Washer	X	2
5	NAS1149F0632P	Washer	X	4
6	NAS1352-6H48P	Screw	X	4
7	MS20995C32	0.032 in. dia. Safety Wire	X	A/R
8	C593-3	Engine Mount Assembly (Incl item 9)	X	2
	C593-4	Block (Ref)		
9	C653-2	Mount (Lubricate with water or A257-8 rubber lubricant during installation.)	X	2
10	C046	Lower Frame Assembly (Ref)		
11	MS20002C8	Washer	X	2
12	AN8-31A	Bolt (or NAS6608-39)	X	2
13	C145	Engine Assembly (Ref; see Figures 71-5 and 71-9)		
NOTES				

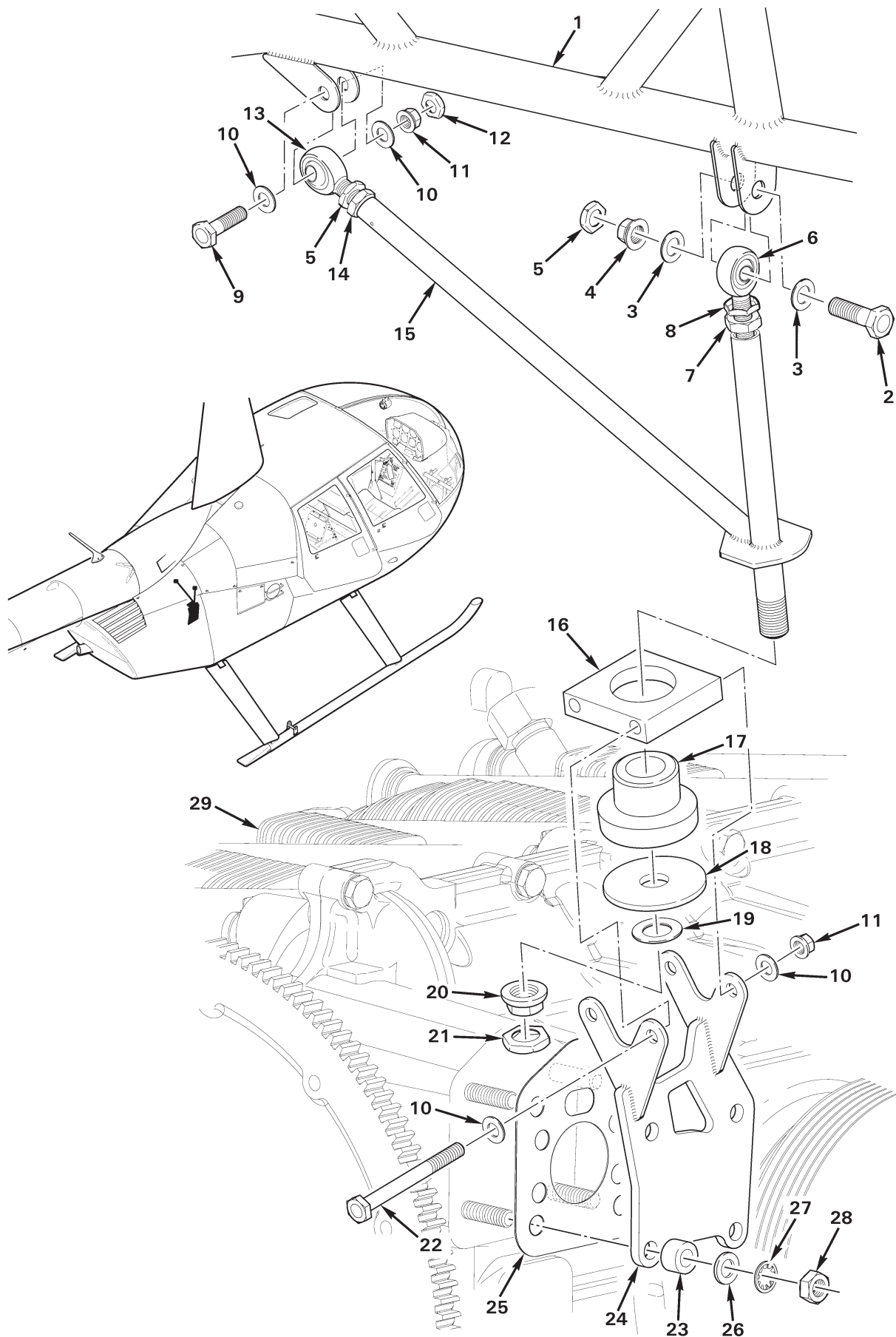


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		C174-7 AFT ENGINE MOUNT SUPPORT WELDMENT		
71-2A-1	C020	Upper Frame Assembly (Ref; see Figure 53-19)		
2	NAS6605-9	Bolt	X	1
3	NAS1149F0532P	Washer	X	2
4	D210-5	Nut	X	1
5	B330-16	Palnut	X	2
6	D173-2	Rod End	X	1
7	AN316-6R	Nut	X	1
8	B330-19	Palnut	X	1
9	NAS6604-8	Bolt	X	1
10	NAS1149F0432P	Washer	X	6
11	D210-4	Nut	X	3
12	B330-13	Palnut	X	1
13	A101-4	Rod End	X	1
14	AN316-5R	Nut	X	1
15	C174-7	Support Weldment (coat tube interiors with B270-21 protectant)	X	1
16	C592-4	Mount Assembly (incl item 17)	X	1
	C592-5	Block (Ref)		
17	C653-1	Mount (Lubricate with water or A257-8 rubber lubricant during installation.)	X	1
18	C592-6	Washer	X	1
19	NAS1149F0832P	Washer	X	1
20	D210-8	Nut	X	1
21	B330-24	Palnut	X	1
22	NAS6604-34	Bolt	X	2
23	C130-42	Spacer	X	4
24	C174-11	Plate Weldment	X	1
25	72053*	Gasket	X	1
26	STD-35*	Washer	X	4
27	STD-475*	Washer (internal teeth)	X	4
28	STD-1410*	Nut	X	4
29	C145	Engine Assembly (Ref; see Figures 71-5 and 71-9)		
NOTES * Lycoming part number.				

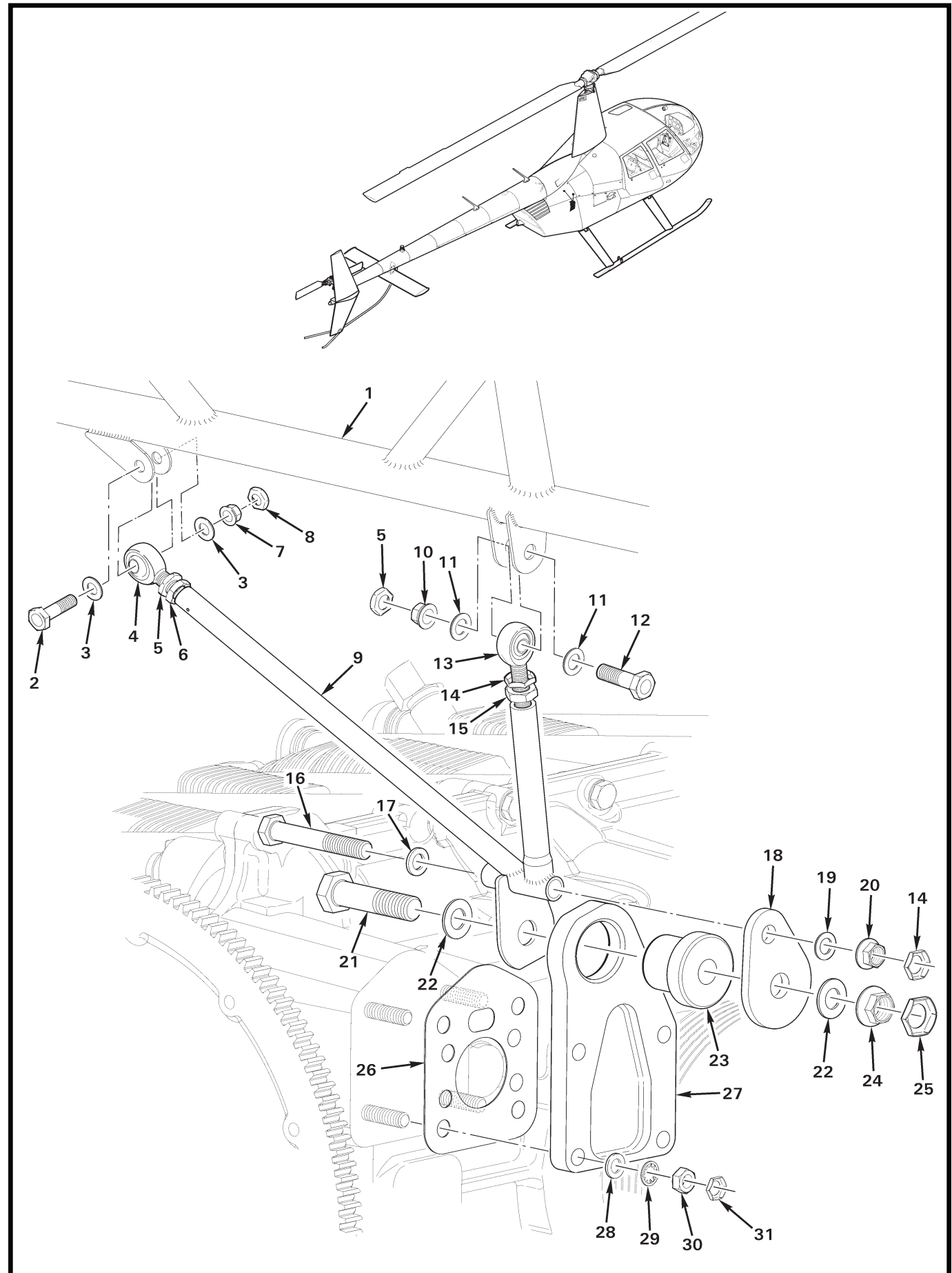


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		C174-1 AFT ENGINE SUPPORT ASSEMBLY		
71-3-1	C020	Upper Frame Assembly (Ref; see Figure 53-19)		
2	NAS6604-8	Bolt	X	1
3	NAS1149F0432P	Washer	X	2
4	A101-4	Rod End	X	1
5	B330-16	Palnut	X	2
6	AN316-5R	Nut	X	1
7	D210-4	Nut	X	1
8	B330-13	Palnut	X	1
9	C174-1	Support	X	1
10	D210-5	Nut	X	1
11	NAS1149F0532P	Washer	X	2
12	NAS6605-9	Bolt	X	1
13	D173-2	Rod End	X	1
14	B330-19	Palnut	X	2
15	AN316-6R	Nut	X	1
16	AN6-23A	Bolt (or NAS6606-30)	X	1
17	A141-23	Washer	X	1
18	C592-2	Link	X	1
19	NAS1149F0632P	Washer	X	1
20	D210-6	Nut	X	1
21	NAS6608-20	Bolt (or AN8-20A)	X	1
22	NAS1149F0832P	Washer	X	2
23	C653-1	Mount (Lubricate with water or A257-8 rubber lubricant during installation.)	X	1
24	D210-8	Nut	X	1
25	B330-24	Palnut	X	1
26	72053*	Gasket	X	A/R
27	C592-3	Engine Mount (Ref, includes item 23.)		
28	STD-35*	Washer	X	4
29	STD-475*	Washer (internal teeth)	X	4
30	STD-1410*	Nut	X	4
31	B330-15	Palnut	X	4
NOTES * Lycoming part number.				

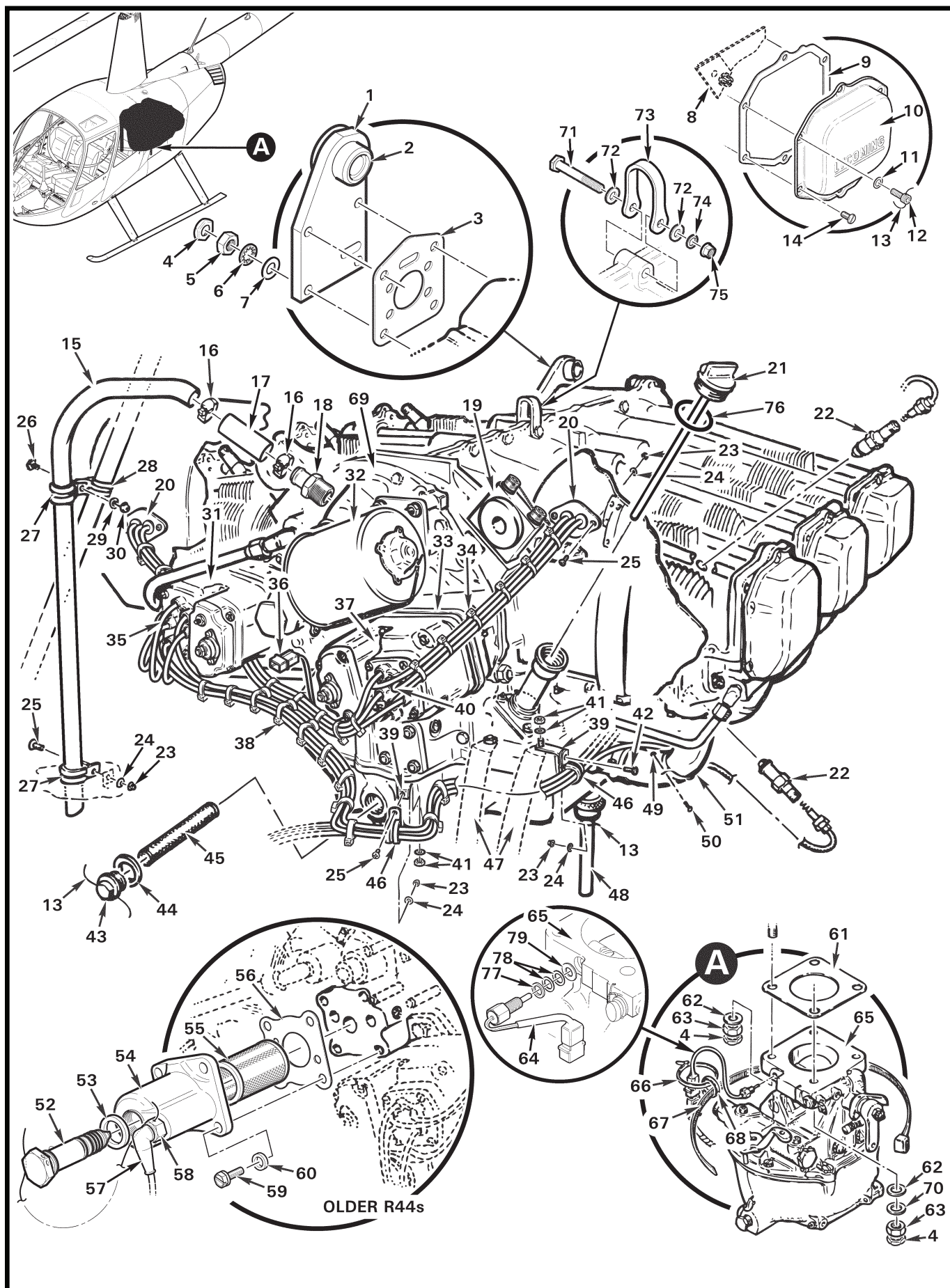


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
71-9-53 54		IO-540 POWERPLANT COMPONENTS (Cont'd)		
	STD-160*	Lockwasher	O	1
	—	Nut	O	1
NOTES * Lycoming part no.				

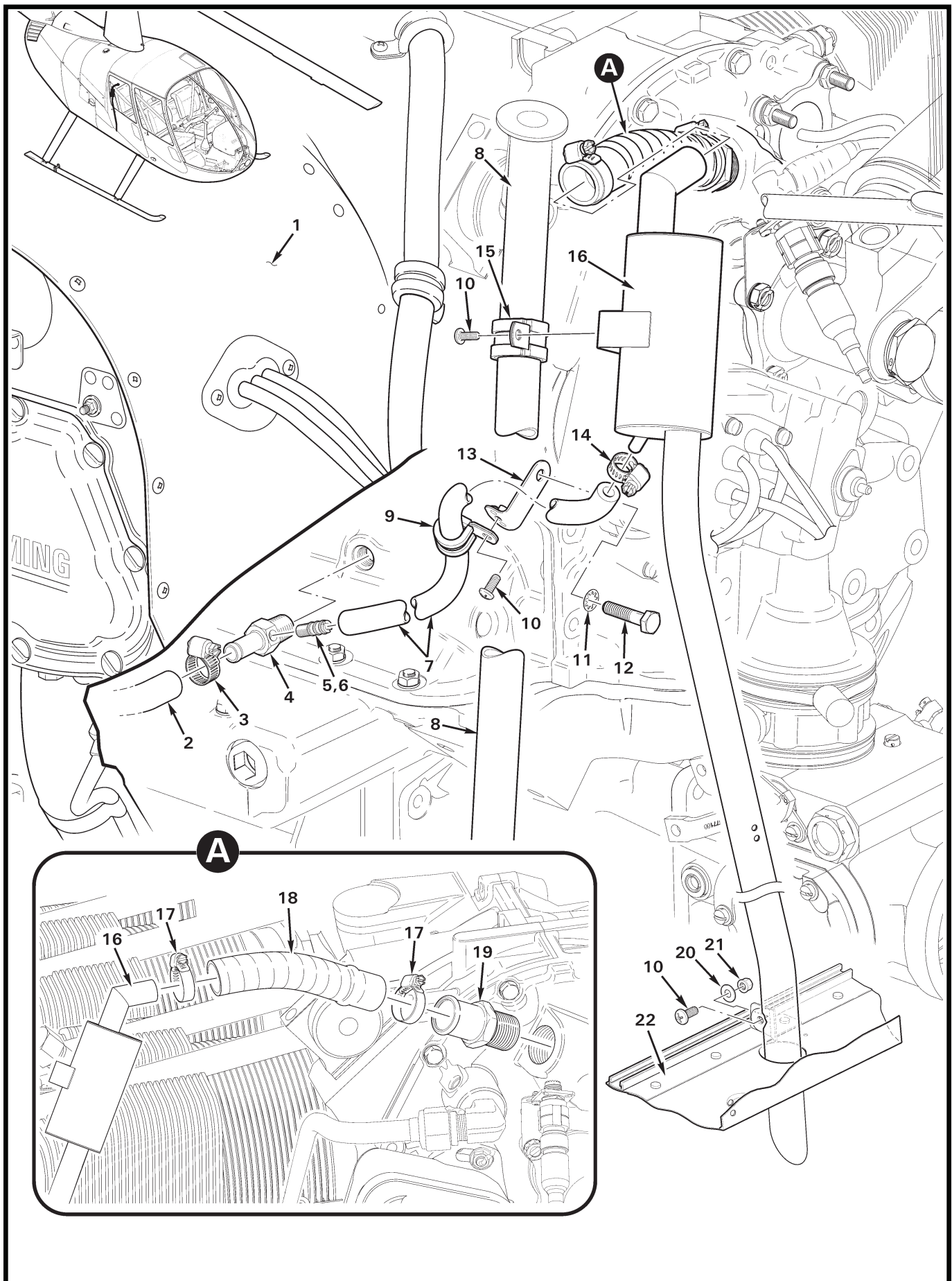


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		AIR/OIL SEPARATOR ASSEMBLY INSTALLATION		
71-11B-1	C145	Engine Assembly (Ref; see Figures 71-5 & 71-9)		
2	STD-1821 *	Hose (Ref)		
3	LW-15592-5-05 *	Clamp	X	1
4	C729-1 **	Adapter	X	1
5	C729-2	Fitting (Install in item 4; apply item 6 to threads and install fully bottomed.)	X	1
6	B270-20	Adhesive	X	A/R
7	A729-77	Tube	X	1
8	C046	Fame Assembly - Lower (RH, Ref)		
9	MS21919WDG8	Clamp	X	1
10	MS27039C0806	Screw	X	3
11	STD-160 *	Lockwasher	X	1
12	LW-25-0.94 *	Bolt (1/4-20 x 15/16 length)	X	1
13	C729-14	Bracket Assembly	X	1
14	B277-4	Clamp	X	1
15	MS21919WDG14	Clamp	X	1
16	C728-2	Separator Assembly – Air/Oil	X	1
17	B277-12	Clamp	X	2
18	A785-43	Hose	X	2
19	72996 *	Fitting (breather, Ref)		
20	NAS1149FN816P	Washer	X	1
21	MS21042L08	Nut	X	1
22	C015	Cabin Assembly (Ref)		
NOTES * Lycoming part no. ** Install using B270-6 sealant or A701-11 tape on threads.				

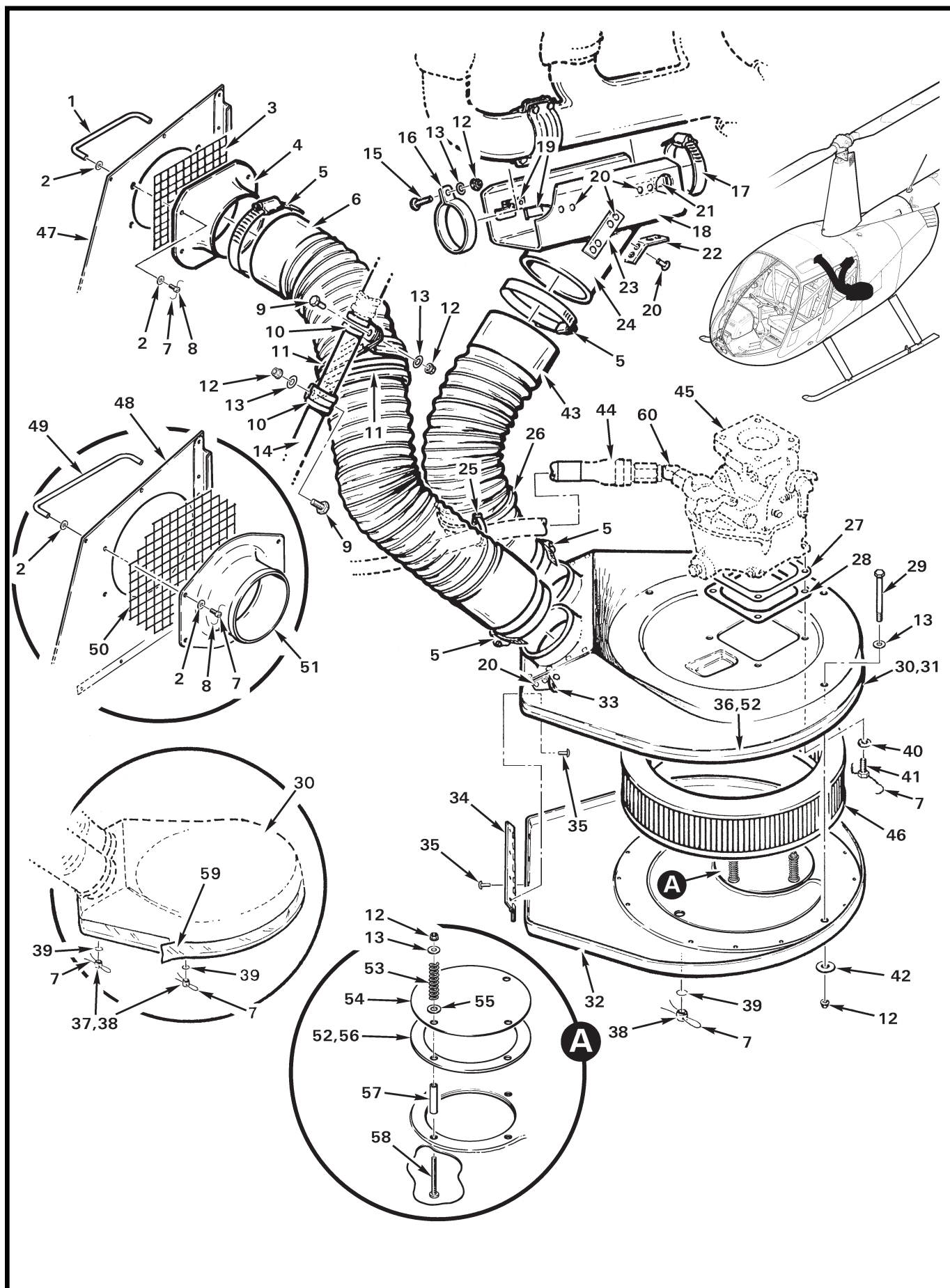


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
71-25-1		EXHAUST MUFFLER SHIELD ASSEMBLY		
	C169-35	Exhaust Muffler Assembly (Ref)		
	C169-37	Exhaust Muffler Assembly (Ref, not shown)		
	C169-1*	Exhaust Muffler Assembly (Ref, not shown)		
	C169-31*	Exhaust Muffler Assembly (Ref, not shown)		
	2 C169-18	Tail Pipe (Ref)		
	3 B277-036	Clamp	X	2
	4 D314-2	Shield Assembly (RH)	X	1
	5 D314-1	Shield Assembly (LH)	X	1
	6 B277-48	Clamp	X	2
7	D317-1	Shield Assembly	X	1
NOTES * Earlier R44s.				

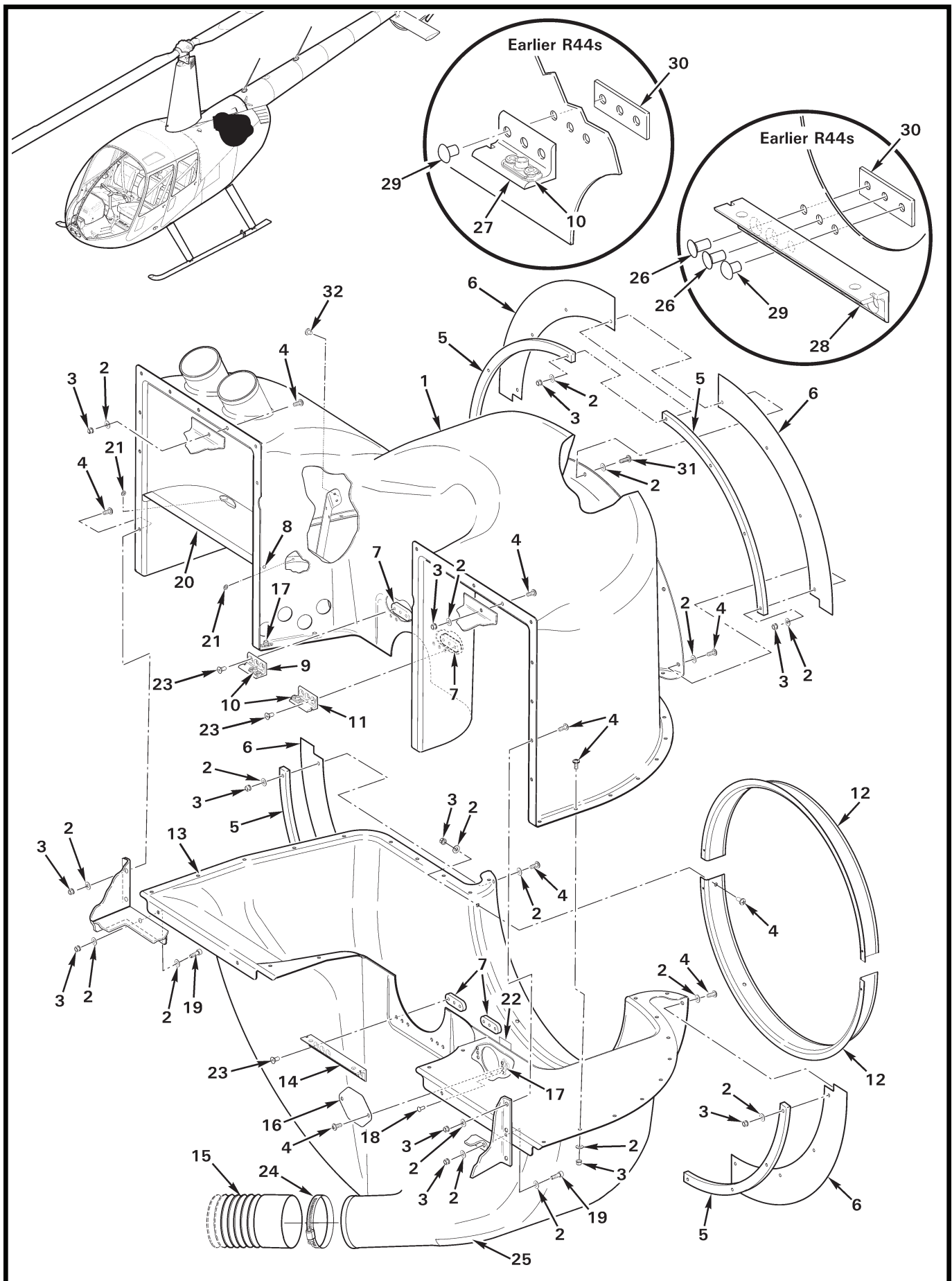


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SCROLL ASSEMBLY – WITHOUT A/C		
71-27-1	C236-1	Scroll Assembly - Upper (Incl items 7, 8, 9, 11, 20, 17, 18, and 23. To replace order item 33.)	O	1
2	NAS1149FN816P	Washer	X	66
3	MS21042L08	Nut	X	66
4	MS27039C0806	Screw	X	62
5	D229-2	Retainer	X	4
6	D229-3	Seal (install RH over LH)	X	4
7	A185-7	Plate (thread)	X	4
	A185-3	Plate (Install using items 26 & 29)	X	4
8	MS20470AD4	Rivet (NAS9301B-4-02 or NAS9301B-4-03 blind; optional) . .	X	5
9	A185-8	Bracket (LH)	X	1
10	MS21075L3E	Nutplate (install using item 18 [4])	X	2
11	A185-9	Bracket (RH)	X	1
12	D229-1	Lip	X	2
13	C236-2	Scroll Assembly - Lower (Incl items 7, 8, 14, 17, 18, 22, 23, and 25)	X	1
14	A185-6	Bracket (lower)	X	1
15	A785-12	Hose (Scroll-to-muffler shroud. Ref; see Figure 21-37.)		
16	D229-4	Cover	X	1
17	MS21069L08	Nutplate (install using item 18)	X	6
18	MS20426AD3	Rivet (or MS20605R3W2 at item 17)	X	16
19	NAS1352-08-8P	Screw	X	5
20	D168-1	Vane Assembly (install using item 8)	X	1
21	NAS620-5	Washer (for shimming between items 1 and 20, [2] places) . .	X	A/R
22	A701-1	Tape - Aluminum (1 in. width)	X	A/R
23	D216-1	Screw (or 91266A192 Screw)	X	12
24	B277-36	Clamp (Ref, see Figure 21-37)		
25	A701-2	Tape-Aluminum (6 in. width)	X	A/R
26	MS20426AD5	Rivet	X	4
27	A185-2	Bracket (LH)	X	1
	A185-5	Bracket (RH; not shown)	X	1
28	A185-1	Bracket (lower)	X	1
NOTES				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SCROLL ASSEMBLY – WITHOUT A/C (Cont’d)		
71-27-29	MS20470AD5	Rivet	X	8
30	A185-3	Plate	X	4
31	MS27039C0807	Screw (Install 180° apart.)	X	2
32	MS20470AD4	Rivet	X	2
33	C236-1-2	Scroll Set – Without A/C (Incl items 1 and 13)	X	1
	C027-2A	Scroll Set (Ref, no longer available. Superseded by C236-1-2 Scroll Set – Without A/C)		
NOTES				

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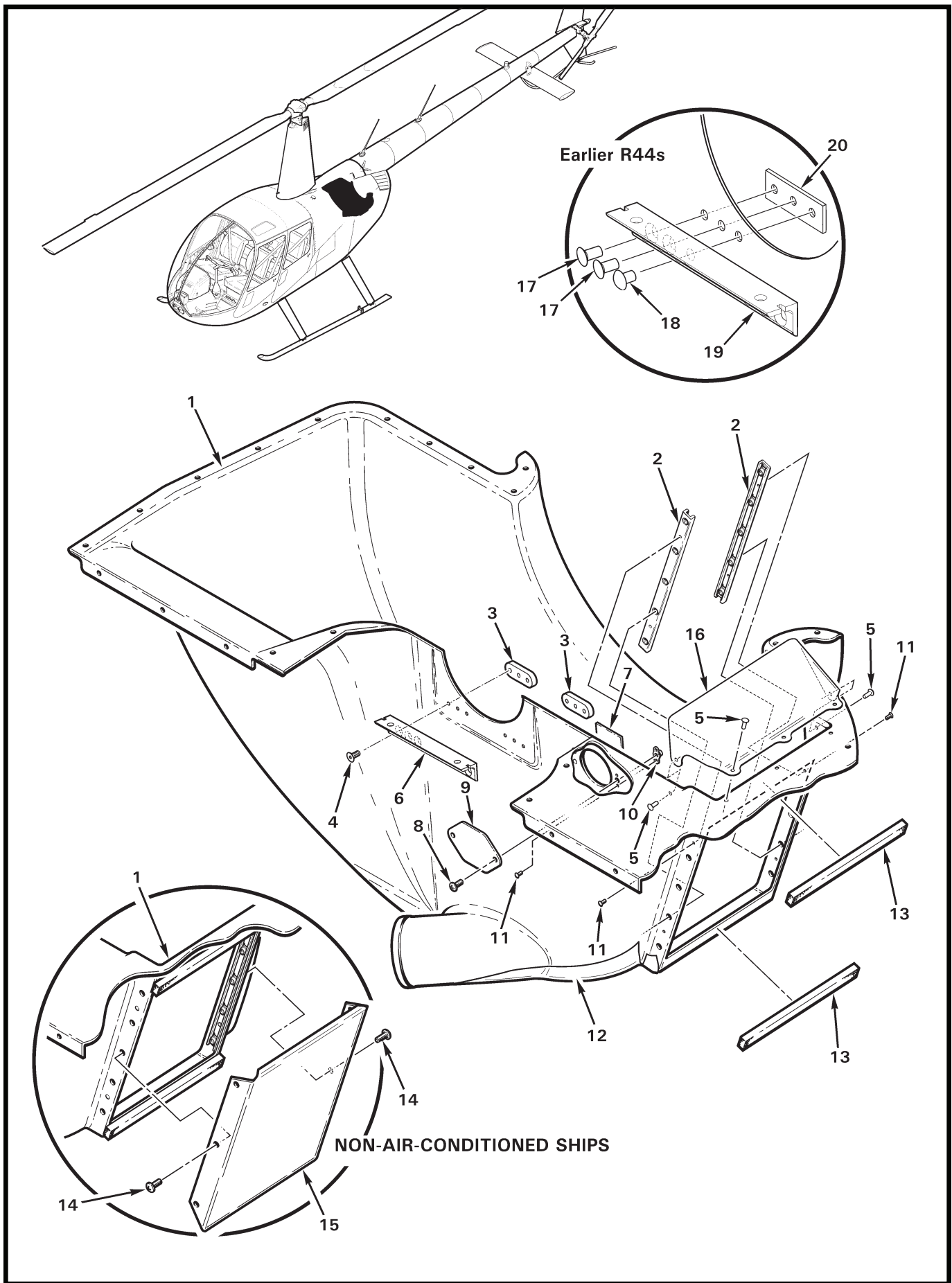


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SCROLL ASSEMBLY – WITH A/C		
71-29-1	C236-5*	Scroll Assembly - Lower (Incl items 2 thru 7, 10 thru 13, and 16)	X	1
2	A738-35	Gang Channel	X	2
3	A185-7	Plate (threaded)	X	4
	A185-3	Plate (Install using items 17 & 18)	X	4
4	D216-1	Screw (or 91266A192 Screw)	X	12
5	MS20470AD4	Rivet (NAS9301B-4-02 or NAS9301B-4-03 blind; optional) . .	X	5
6	A185-6	Bracket (lower)	X	1
7	A701-1	Tape	X	A/R
8	MS27039C0806	Screw	X	2
9	D229-4	Cover	X	1
10	MS21069L08	Nutplate	X	2
11	MS20426AD3	Rivet (or MS20605R3W2)	X	8
12	A701-2	Tape - Aluminum (6 in. width)	X	A/R
13	A260-11	Tape	X	2
14	MS27039C1-07	Screw	X	6
15	D854-1	Cover (non-air conditioned ships only)	X	1
16	D209-1	Baffle (install using item 5)	X	1
17	MS20426AD5	Rivet	X	4
18	MS20470AD5	Rivet	X	2
19	A185-1	Bracket (lower)	X	1
20	A185-3	Plate	X	2
21	C236-1-5*	Scroll Set – With A/C (Not shown, includes items 1, 8, 9, and item 1 from Figure 71-27.)	X	1
	C027-3A/C	Scroll Set (Ref, no longer available. Superseded by C236-1-5 Scroll Set – With A/C)		
NOTES * R44 II S/N 10001 thru 29999 and R44 Cadet S/N 30001 thru 39999 helicopters only.				

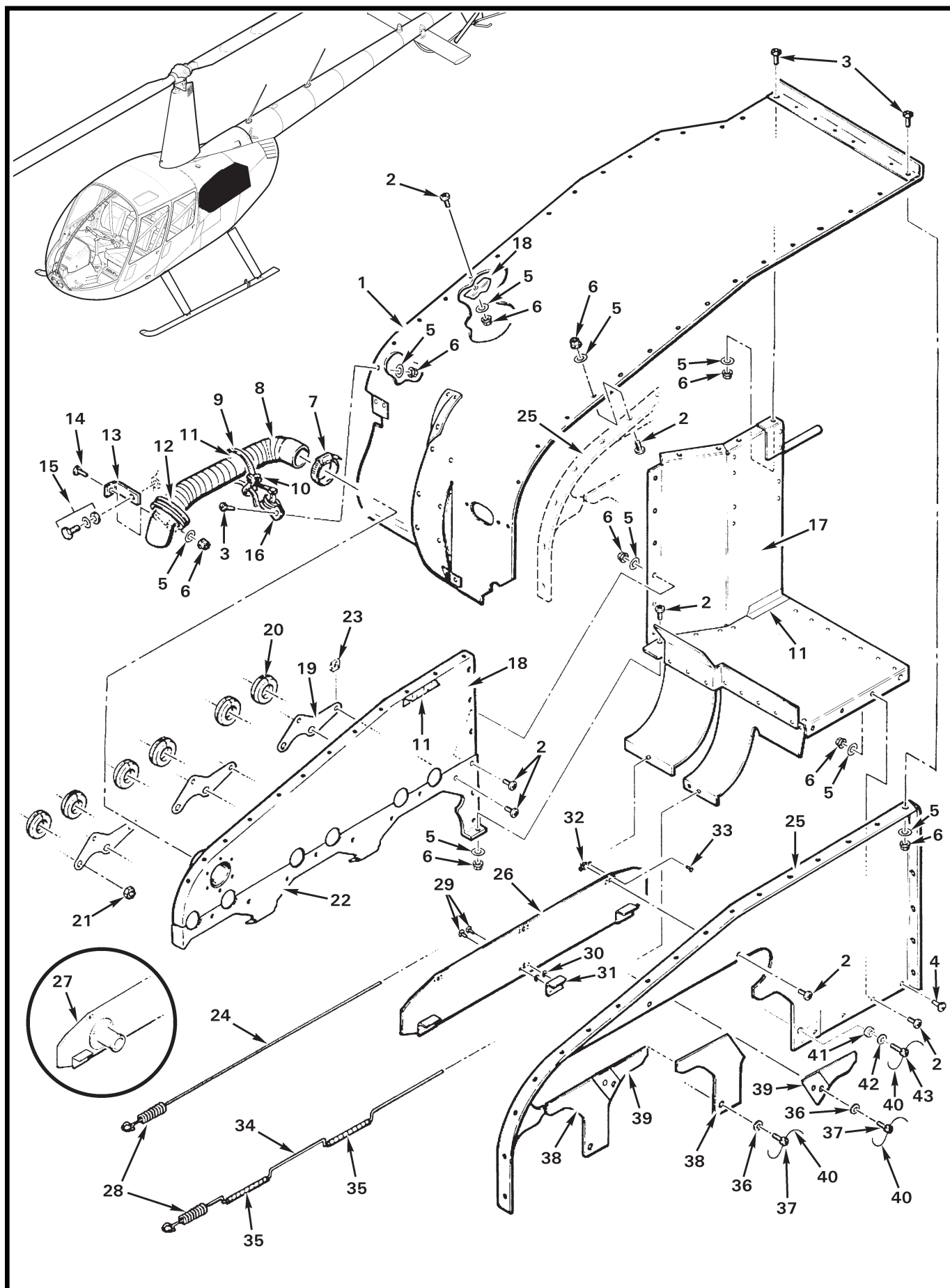


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SIX-INSTRUMENT CONSOLE ASSEMBLY		
95-61-1	9688K643	Hole Plug (install using item 2)	X	2
2	B270-18	Adhesive	X	A/R
3	C479-1	Mount Assembly (Ref)		
4	B320-1	Horn Assembly (RH and LH, 14-volt; includes items 6 thru 9)	X	2
	B320-3	Horn Assembly (RH and LH, 28-volt; includes items 6 thru 9)	X	2
5	MS27039C0806	Screw	X	6
6	B332-42	Lockwasher	X	1
7	MS35206-241	Screw	X	1
8	B320-79	Wire (to ground)	X	1
9	B263-10	Housing	X	1
	B263-1	Pin	X	1
10	B263-11	Housing (Ref)		
	B263-2	Socket (Ref)		
11	B198-1	Light (amber; includes washer, nut, and amber lens as shown)	X	12
12	B198-2	Light (red; includes washer, nut, and red lens as shown)	X	2
13	B196-1	Lamp (14-volt)	X	1
	B196-21	Lamp (28-volt)	X	1
14	A661-1	Switch – Ignition (Incl items 15, 16, and two keys)	X	1
15	—	Nut	O	1
16	—	Nut	O	1
17	G051-18	Shell Assembly (“High”; includes items 1, 2, 18, 21, 22, and 42)	X	1
18	A226-11	Trim	X	A/R
19	MS33737-13C	Nut – Instrument	X	6
20	A602-1	Rate-of-Climb Indicator	X	1
21	G051-13	Visor Liner (install using item 22)	X	A/R
22	B270-8QT	Adhesive	X	A/R
23	MS3367-5-9	Ty-Rap	X	A/R
24	A655-1	Time Delay – Low Fuel Warning	X	1
25	B280-4	Relay Assembly (governor off lamp)	X	1
26	C792-4	Engine/Rotor Tachometer (14-volt, without alert; superseded by C792-5)	O	1
	C792-5	Engine/Rotor Tachometer (14/28-volt, with alert; not shown)	X	1
	B792-2*	Harness Assembly – Dual Tach (not shown)	X	1
27	MS33737-15C	Nut – Instrument	X	12

NOTES * Required to connect C792-5 tachometer to airframe wiring on R44 ship S/N 2624 and prior, R44 II S/N 10001 thru 14411, except 14364, and R44 Cadet S/N 30001 thru 30070, except 30061.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SIX-INSTRUMENT CONSOLE ASSEMBLY (Cont'd)		
95-61-28	D716-010	Harness Assembly – Console (Ref; includes items 14, 23 thru 25, 49, and 52)	X	1
29	MS24693-S32	Screw	X	18
30	C599-1	Airspeed Indicator (130 knot VNE, KM/H)	X	1
	C599-7*	Airspeed Indicator (120 knot VNE, MPH)	X	1
	C599-8*	Airspeed Indicator (120 knot VNE, KM/H; superseded by C599-7)	O	1
31	MS21042L06	Nut	X	4
32	NAS1149FN616P	Washer	X	4
33	B190-6	Cover	X	1
34	G055-10	Face (standard)	X	1
35	MS24693-S27	Screw	X	4
36	A613-1	Altimeter	X	1
37	A743-1	Call Letters Plate (please specify call letters)	X	1
38	A600-4	Manifold Pressure Gage	X	1
	A600-7**	Manifold Pressure Gage	X	1
39	MS24694-S4	Screw	X	6
40	R8096	Key – Duplicate (specify ship S/N and “PK” number when ordering)	X	1
41	D768-2	Key (blank; black plastic-coated “R44” logo)	X	1
42	G054-9	Face Assembly (Incl items 43 and 44)	X	1
43	MS20426AD3	Rivet	X	4
44	A356-2	Hinge (install using item 43)	X	1
45	G051-12	Shell Assembly (“Low”, for earlier R44s. Includes items 1, 2, 18, 21, 22, and 46.)	O	1
46	G054-17	Face Assembly (Incl items 43 and 44)	O	1
47	B260-2	Terminal	X	16
48	—	Washer (Ref)		
49	—	Screw (Ref)		
50	MS25068-23	Switch – Clutch (Incl items 48, 49, 51, 52, and 54)	X	1
51	—	Nut	O	2
52	—	Keywasher	O	1
53	MS25224-1	Guard	X	1
54	—	Lockwasher	O	1
55	G055-11	Face (optional)	X	1
NOTES * R44 Cadet S/N 30001 and subsequent helicopters. ** R44 Cadet S/N 30009 and subsequent helicopters.				

CHAPTER 96

ELECTRICAL SYSTEM

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FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		ENGINE GROUND STRAPS INSTALLATION		
96-79-1	STD-1411*	Nut	X	2
2	STD-160*	Lockwasher	X	2
3	C357-1	Clip (Ref)		
4	A212-2	Strap	X	2
5	MS21042L4	Nut	X	2
6	NAS1149F0432P	Washer	X	4
7	C015-3	Skin (LH cabin belly; Ref)		
8	A780-22	Cable Assembly (Ref)		
9	AN4-3A	Bolt	X	2
10	AN4-3A	Bolt	X	1
	AN4-4A	Bolt	X	1
11	A780-45	Cable Assembly	X	1
12	MS3367-5-9	Ty-Rap	X	2
13	AN4-4A	Bolt	X	1
NOTES * Lycoming part no.				

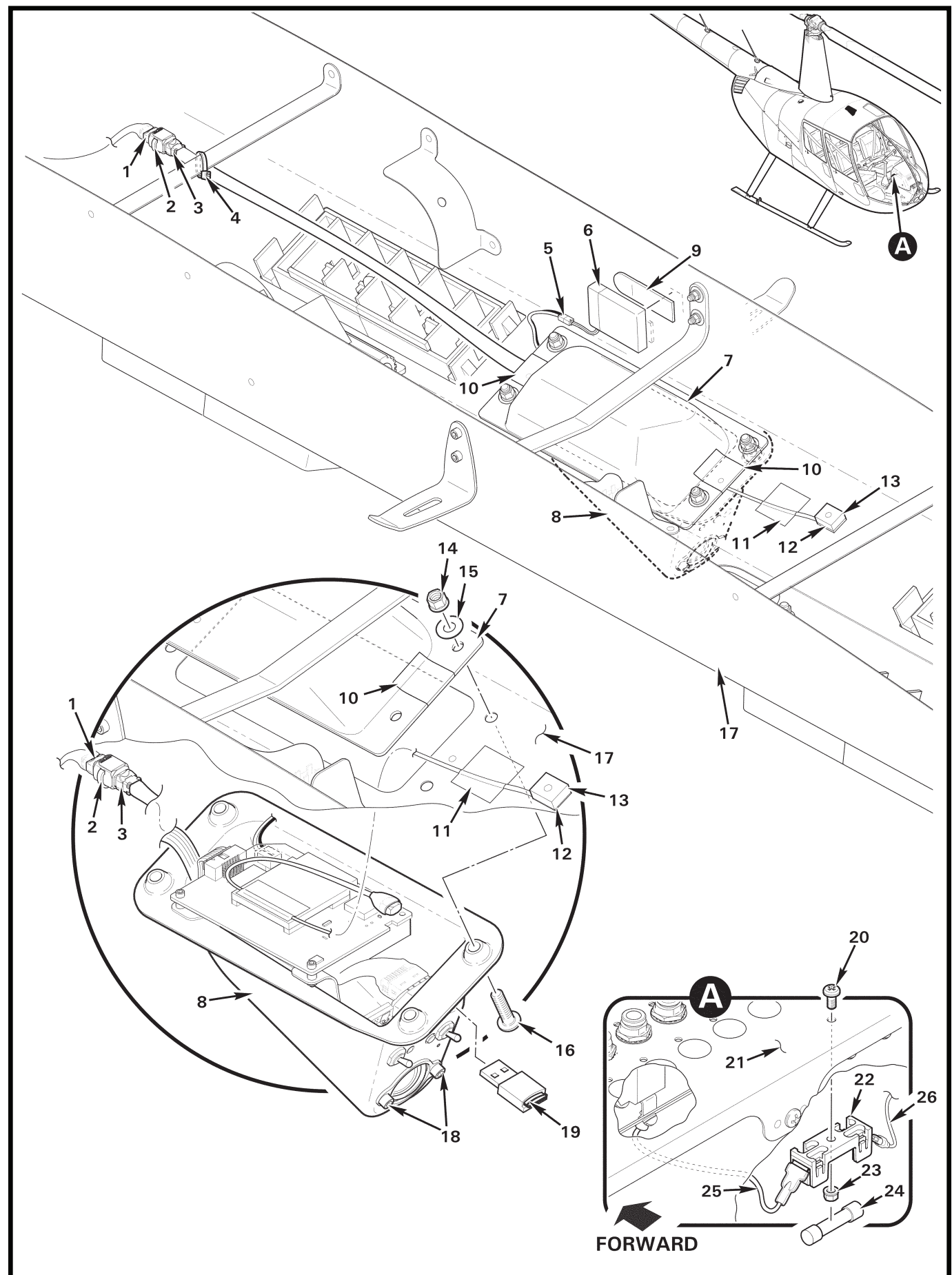


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		COCKPIT CAMERA INSTALLATION WITH AIR CONDITIONING		
96-81-1	D269-6	Receptacle (Ref; includes [6] M39029/57-354 sockets. Included with C859* main wire harness assembly.)		
2	MS3367-4-9	Ty-Rap (locks connector)	X	1
3	D269-5	Plug (Incl [6] M39029/58-360 pins)	X	1
4	MS3367-4-9	Ty-Rap	X	1
5	RV-10251C	Battery Extension Harness	X	1
6	RV-BATT-LIPO500	Battery (Install using item 9.)	X	1
7	F712-4	Cover	X	1
8	F039-3	Enclosure Assembly – Cockpit Camera (with A/C installed; includes items 3, 5, 6, 9, 12, 13, and 18)	X	1
9	1024A38	Adhesive Strip	X	1
10	A701-5	Tape (wrap around fwd/aft edge of item 7)	X	A/R
11	A701-1	Tape	X	A/R
12	A701-7	Tape	X	A/R
13	F714-3	Antenna Assembly (Install metal side down using item 12.) . .	O	1
14	MS21042L08	Nut	X	4
15	NAS1149FN816P	Washer	X	4
16	MS27039C0809	Screw	X	4
17	D796-3**	Duct Assembly	X	1
18	NAS1352-04-4	Screw	X	2
19	F714-4	Flash Drive Assembly	X	1
20	MS35206-227	Screw	X	1
21	C490	Panel Assembly – Circuit Breaker ((Ref)		
22	D262-1	Fuseblock	X	1
23	MS21042L06	Nut	X	1
24	AGV-5-R	Fuse (5 amp)	X	1
25	-3078	Wire (Ref)		
26	-3079	Wire (Ref)		

27	KI-271-6	R44-series & R66, (with A/C) Cockpit Camera Installation Kit Instructions (Kit replaces existing air conditioning duct assembly with air conditioning duct assembly containing camera & antenna, on helicopters equipped with air conditioning & factory-installed cockpit camera provisions. KI-271-6A is eligible for installation on R44II S/N 14412 & subsequent, and Cadet S/N 30071 & subsequent. KI-271-6B is eligible for installation on R66 S/N 1007 and subsequent.) .	X	A/R
NOTES * Please specify color. Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
96-81-28	KI-275-4	COCKPIT CAMERA INSTALLATION WITH AIR CONDITIONING (Cont'd) R44-series (with A/C) Cockpit Camera Installation Kit Instructions (Eligible for installation on R44 II S/N 14411 & prior, and Cadet S/N 30070 & prior, with air conditioning. If helicopter is currently equipped with D796-1 air conditioning duct assembly, KI-278-2 must be installed congruently. Kit replaces existing air conditioning duct assembly with air conditioning duct assembly containing camera & antenna, and provides instructions for installing required wiring, including splicing camera audio wire with copilot headset audio wires.)	X	A/R
NOTES				

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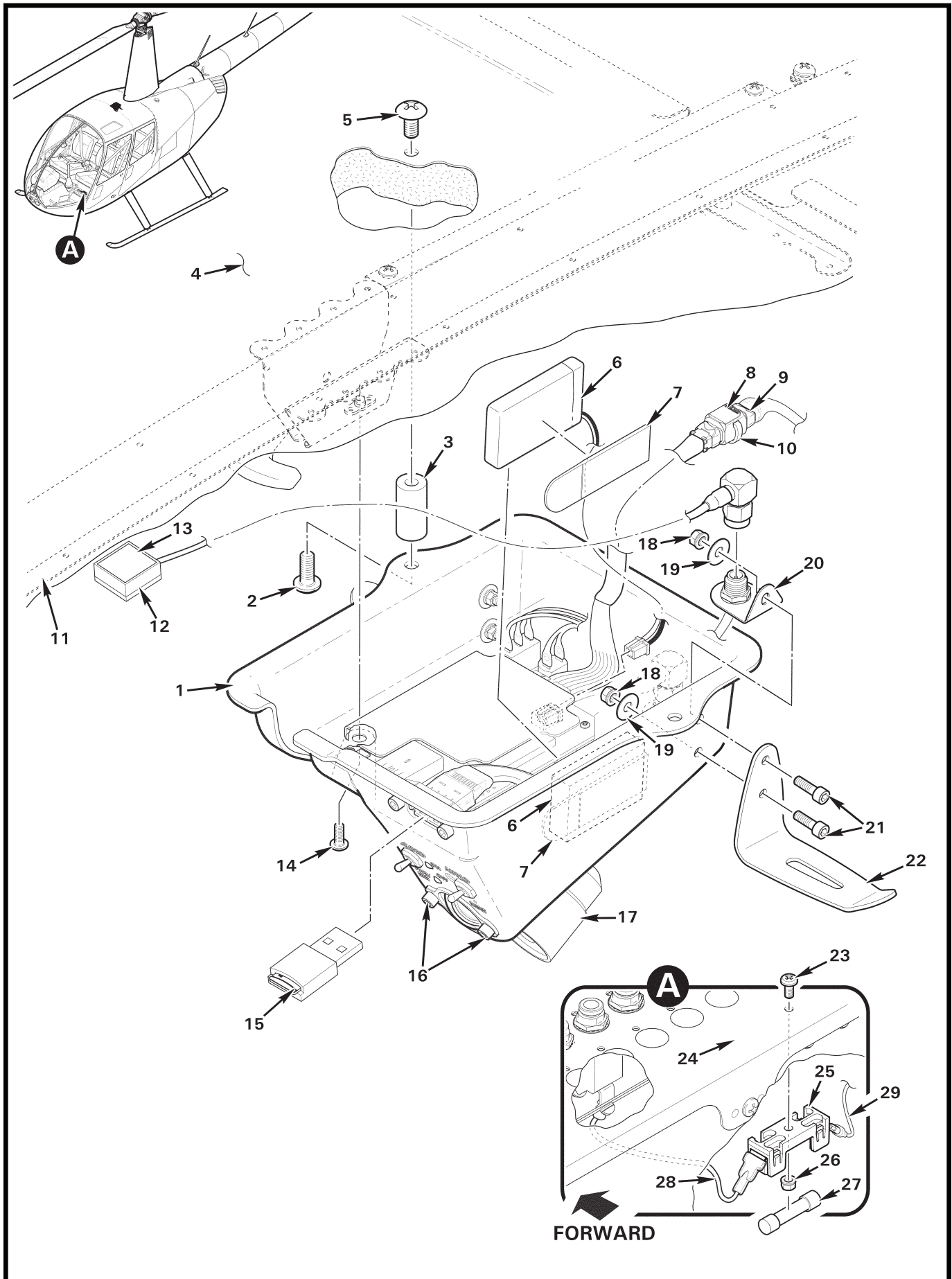


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
96-83-1	F039-2	COCKPIT CAMERA INSTALLATION WITHOUT AIR CONDITIONING Enclosure Assembly – Cockpit Camera (without A/C installed; includes items 6 thru 8, 16 thru 22)	X	1
	2 MS27039C0806	Screw	X	4
	3 C710-3	Spacer	X	2
	4 F273-1	Roof (Ref; see Figure 33-13)		
	5 AN526C832R6	Screw	X	2
	6 RV-BATT-LIPO500	Battery (Install using item 7)	X	1
	7 1024A38	Adhesive Strip	X	1
	8 D269-5	Plug (Incl [6] M39029/58-360 pins)	X	1
	9 D269-6	Receptacle (Ref; includes [6] M39029/57-354 sockets. Included with C859* main wire harness assembly.)		
	10 MS3367-4-9	Ty-Rap (lock connector)	X	1
	11 F238	Support (Ref)		
	12 F714-2	Antenna Assembly (Install metal side down using item 13.) . .	O	1
	13 A701-7	Tape	X	A/R
	14 MS35206-232	Screw	X	1
	15 F714-4	Flash Drive Assembly	X	1
	16 NAS1352-04-4	Screw	X	2
	17 D606-1	Spotlight (Ref. See Figure 33-15)		
	18 MS21042L04	Nut	X	2
	19 NAS1149FN416P	Washer	X	2
	20 F713-7	Angle	X	1
	21 NAS1352-04-3	Screw	X	2
	22 A752-1	Angle	X	1
	23 MS35206-227	Screw	X	1
	24 C490-18	Panel Assembly – Circuit Breaker ((Ref)		
	25 D262-1	Fuseblock	X	1
	26 MS21042L06	Nut	X	1
	27 AGV-5-R	Fuse (5 amp)	X	1
	28 -3078	Wire (Ref)		
	29 -3079	Wire (Ref)		
NOTES				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		COCKPIT CAMERA INSTALLATION WITHOUT AIR CONDITIONING (Cont'd) * * *		
96-83-30	KI-271-2	R44-series and R66 Cockpit Camera Installation Kit Instructions (Eligible for installation on R44 S/N 2025 & subsequent, R44 II S/N & subsequent, Cadet S/N 30071 & subsequent, and R66 S/N 1007 & subsequent, without (optional) air conditioning. Installs cockpit camera & antenna on helicopters equipped with factory-installed cockpit camera provisions.)	X	A/R
31	KI-275-2	R44-series (28V) Cockpit Camera Installation Kit Instructions (Eligible for installation on R44 S/N 2421 to 2624, Raven II S/N 14411 & prior, and Cadet S/N 30070 & prior, without (optional) air conditioning. Additionally, R44 S/N 2460 & prior may be eligible for this installation , with helicopter electrical system voltage verification. Refer to KI-275-6 for helicopters with (14V) electrical systems. Kit provides instructions for installation cockpit camera, antenna, and required wiring, including splicing camera audio wire with copilot headset audio wires.)	X	A/R
32	KI-275-6	R44-series (14V) Cockpit Camera Installation Kit Instructions (Eligible for installation on R44 (14V) S/N 2420 & prior, with helicopter electrical system voltage verification. Refer to KI-275-2 for helicopters with (28V) electrical system. Kit provides instructions for installing cockpit camera, antenna, and required wiring, including splicing camera audio wire with copilot headset audio wires.)	X	A/R
NOTES				

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The R44 Illustrated Parts Catalog (IPC) list of effective pages and effective dates are given below. If a previously issued page is not listed below, it is no longer an effective page and must be discarded. The issue or revision date is in bold at the top of each revision log page.

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32.18	APR 2016	33.17	FEB 2020	53.5	APR 2016
32.19	APR 2016	33.18	FEB 2020	53.6	APR 2016
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32.21	APR 2016	33.20	FEB 2020	53.8	APR 2016
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71.27A	FEB 2025	71.58	FEB 2020	79.4	APR 2016
71.27B	FEB 2025	71.59	FEB 2020	79.5	DEC 2021
71.28	FEB 2025	71.60	FEB 2020	79.6	DEC 2021
71.29	FEB 2025	71.61	JAN 2014	79.7	DEC 2021
71.30	FEB 2025	71.62	JAN 2014	79.8	DEC 2021
71.31	JAN 2014	71.63	APR 2016	79.9	DEC 2021
71.32	JAN 2014	71.64	APR 2016	79.10	DEC 2021
71.33	JAN 2014	71.65	APR 2016	79.11	DEC 2021
71.34	JAN 2014	71.66	APR 2016	79.12	DEC 2021
71.35	JAN 2014				
71.36	JAN 2014	76.i	JUN 2014	90.i	JAN 2014
71.37	JAN 2014	76.0	JUN 2014	90.0	JAN 2014
71.38	JAN 2014	76.1	FEB 2020	90.1	JAN 2014
71.39	JAN 2014	76.2	FEB 2020	90.2	JAN 2014
71.40	JAN 2014	76.3	MAY 2016	90.3	JAN 2014
71.41	JAN 2014	76.4	MAY 2016	90.4	JAN 2014
71.42	JAN 2014	76.5	MAY 2016	90.5	JAN 2014
71.43	JAN 2014	76.6	MAY 2016	90.6	JAN 2014
71.44	JAN 2014	76.7	APR 2016	90.7	JAN 2014
71.45	JAN 2014	76.8	APR 2016	90.8	JAN 2014
71.46	JAN 2014	76.9	FEB 2020	90.9	JAN 2014
71.47	JAN 2014	76.10	FEB 2020	90.10	JAN 2014
71.48	JAN 2014	76.11	JAN 2014	90.11	JAN 2014
71.49	DEC 2021	76.12	JAN 2014	90.12	JAN 2014
71.49A	DEC 2021	76.13	JAN 2014	90.13	JAN 2014
71.49B	DEC 2021	76.14	JAN 2014	90.14	JAN 2014

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90.19.....	JAN 2014	92.18.....	FEB 2020	95.4.....	FEB 2020
90.20.....	JAN 2014	92.19.....	FEB 2020	95.5.....	FEB 2020
90.21.....	JAN 2014	92.20.....	FEB 2020	95.6.....	FEB 2020
90.22.....	JAN 2014	92.21.....	JAN 2014	95.7.....	FEB 2020
90.23.....	JAN 2014	92.22.....	JAN 2014	95.8.....	FEB 2020
90.24.....	JAN 2014	92.23.....	JAN 2014	95.9.....	FEB 2020
90.25.....	JAN 2014	92.24.....	JAN 2014	95.10.....	FEB 2020
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92.8.....	JAN 2014	94.i.....	DEC 2021	95.26.....	FEB 2020
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92.10.....	JAN 2014	94.1.....	DEC 2021	95.28.....	FEB 2020
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95.38	FEB 2020	95.74	FEB 2020	96.15	DEC 2021
95.39	FEB 2020	95.75	FEB 2020	96.16	DEC 2021
95.40	FEB 2020	95.76	FEB 2020	96.17	JAN 2014
95.41	FEB 2020	95.77	FEB 2020	96.18	JAN 2014
95.42	FEB 2020	95.78	FEB 2020	96.19	JAN 2014
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95.44	FEB 2020	95.80	FEB 2020	96.21	JAN 2014
95.45	FEB 2020	95.81	FEB 2020	96.22	JAN 2014
95.46	FEB 2020	95.82	FEB 2020	96.23	JAN 2014
95.47	FEB 2020	95.83	FEB 2020	96.24	JAN 2014
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95.49	FEB 2020			96.26	JAN 2014
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95.51	FEB 2020	96.ii	FEB 2025	96.28	JAN 2014
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95.53	FEB 2020	96.0	JAN 2014	96.30	JAN 2014
95.54	FEB 2020	96.1	JAN 2014	96.31	JAN 2014
95.55	FEB 2020	96.2	JAN 2014	96.32	JAN 2014
95.56	FEB 2020	96.3	JAN 2014	96.33	JAN 2014
95.57	FEB 2020	96.4	JAN 2014	96.34	JAN 2014
95.58	FEB 2020	96.5	JAN 2014	96.35	JAN 2014
95.59	FEB 2020	96.6	JAN 2014	96.36	JAN 2014
95.60	FEB 2020	96.7	JAN 2014	96.37	JAN 2014
95.61	FEB 2025	96.8	JAN 2014	96.38	JAN 2014
95.62	FEB 2025	96.9	JAN 2014	96.39	JAN 2014
95.63	FEB 2020	96.10	JAN 2014	96.40	JAN 2014
95.64	FEB 2020	96.11	DEC 2021	96.41	JAN 2014
95.65	FEB 2020	96.12	DEC 2021	96.42	JAN 2014
95.66	FEB 2020	96.12A	DEC 2021	96.43	FEB 2020
95.67	FEB 2020	96.12B	DEC 2021	96.44	FEB 2020
95.68	FEB 2020	96.12C	DEC 2021	96.45	JAN 2014
95.69	FEB 2020	96.13	DEC 2021	96.46	JAN 2014
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96.50	FEB 2020	96.81A	FEB 2025	97.27	FEB 2020
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96.52	FEB 2020	96.82	FEB 2025	97.29	FEB 2020
96.53	FEB 2020	96.83	FEB 2025	97.30	FEB 2020
96.54	FEB 2020	96.84	FEB 2025	97.31	FEB 2020
96.55	JAN 2014			97.32	FEB 2020
96.56	JAN 2014	97.i	FEB 2020	97.33	FEB 2020
96.57	JAN 2014	97.0	FEB 2020	97.34	FEB 2020
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96.60	JAN 2014	97.3	FEB 2020	97.37	FEB 2020
96.61	JAN 2014	97.4	FEB 2020	97.38	FEB 2020
96.62	JAN 2014	97.5	FEB 2020	97.39	FEB 2020
96.63	FEB 2024	97.6	FEB 2020	97.40	FEB 2020
96.63A	FEB 2024	97.7	FEB 2020	97.41	FEB 2020
96.63B	FEB 2020	97.8	FEB 2020	97.42	FEB 2020
96.63C	FEB 2020	97.9	FEB 2020	97.43	FEB 2020
96.63D	FEB 2020	97.10	FEB 2020	97.44	FEB 2020
96.64	FEB 2020	97.11	FEB 2020	97.45	FEB 2020
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96.66	JAN 2014	97.13	FEB 2020	97.47	FEB 2020
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96.79	FEB 2025	97.24	FEB 2020	97.60	FEB 2020
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99.3	FEB 2020				
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99.5	FEB 2020				
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99.13	FEB 2020				
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99.18	FEB 2020				
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100.4	FEB 2025				
100.5	FEB 2025				
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100.11	FEB 2025				

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