

MANDATORY

SERVICE BULLETIN

DATE: May 18, 2004

Service Bulletin No. 342E
(Supersedes Service Bulletin No. 342D)
Engineering Aspects are
FAA Approved

SUBJECT: Fuel Line (Stainless Steel Tube Assy.) and Support Clamp Inspection and Installation

MODELS AFFECTED: All fuel injected Lycoming engines indicated in fuel line and clamping diagrams.

TIME OF COMPLIANCE: Check every 100 hours, annual inspection, overhaul and any time fuel lines or clamps are serviced, removed or replaced.

There have been instances of fuel line breakages where support clamps have been omitted during field overhaul or repair. The support clamps dampen line vibration due to the impact of cooling air and vibration from the engine and/or aircraft. Also, the fuel supply lines between the fuel injector manifold and the nozzles can become damaged and leak if they are severely bent or kinked during engine maintenance.

As a means of minimizing the hazards of fuel line damage, the following inspection of fuel lines and clamps is required.

1. The fuel lines to the nozzles are made from 1/8 inch tubing. A separate line supplies fuel to the intake port of each cylinder. Check each line visually for any evidence of physical damage and for stains caused by fuel leakage.
2. Remove any line that appears faulty. Do not attempt to repair any line that leaks. Bent lines may be straightened; however, any line with an inside radius less than 5/8 inch must be replaced. Do not reuse any line that is dented; cracks can develop at the site of a dent. Also inspect solder joints at end of lines for cracks. Replace cracked lines, they cannot be repaired. See the latest edition of Service Instruction No. 1301 for superseded fuel line identification, bending requirements (see Figure 1) and replacement information.
3. Examine the location of the clamps that secure the lines to the engine and compare them with the diagrams shown in this bulletin. If clamps are missing, replace fuel line and install clamps as indicated. Also, examine the lines to ensure the clamps securely support the line and for signs of chafing. Replace fuel lines that show indications of chafing and/or have loose clamps.
4. Older engines that used metal clamps with no cushion must use the P/N LW-12598 fuel line sleeve at each of those clamping locations. The fuel line sleeve is not used with the cushioned clamps. Any cushioned clamp, where the cushion has deteriorated or is missing, must be replaced with a new cushion clamp.
5. Compliance with the bulletin must be noted in the aircraft log book.

NOTE: If difficulty is experienced when installing clips on a cylinder fuel injector line due to aircraft baffling, the clips may be installed in positions that provide clearance. Do not permit fuel lines to contact engine or airframe baffle hardware; maintain minimum clearance of 3/16 inch between line and any engine or airframe surface.

NOTE: Revision "E" adds new models indicated by underline and change bar; illustration changes indicated by arrows and change bars; and adds five *new diagrams* 10A (HIO-360-G1A), 18A (IO-540-AE1A5), 19A (IO-540-AB1A5 & TIO-540-AK1A), 21A (IO-540-N1A5, -R1A5, -V4A5, -V4A5D, -W1A5, -W1A5D, -W3A5D) and 24A (IO-540-M1C5).

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(Fuel Lines, Clamps, Brackets, Attaching Hardware as shown in the following Engine Diagrams)

1	76356	TUBE ASSY., Manifold to nozzle fuel line
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3	76358	TUBE ASSY., Manifold to nozzle fuel line
4	76359	TUBE ASSY., Manifold to nozzle fuel line
5	76360	TUBE ASSY., Manifold to nozzle fuel line
6	76361	TUBE ASSY., Manifold to nozzle fuel line
7	76362	TUBE ASSY., Manifold to nozzle fuel line
8	LW-12098-0-100	TUBE ASSY., Manifold to nozzle fuel line
9	LW-12098-0-140	TUBE ASSY., Manifold to nozzle fuel line
10	LW-12098-0-150	TUBE ASSY., Manifold to nozzle fuel line
11	LW-12098-0-160	TUBE ASSY., Manifold to nozzle fuel line
12	LW-12098-0-170	TUBE ASSY., Manifold to nozzle fuel line
13	LW-12098-0-180	TUBE ASSY., Manifold to nozzle fuel line
14	LW-12098-0-190	TUBE ASSY., Manifold to nozzle fuel line
15	LW-12098-0-200	TUBE ASSY., Manifold to nozzle fuel line
16	LW-12098-0-210	TUBE ASSY., Manifold to nozzle fuel line
17	LW-12098-0-220	TUBE ASSY., Manifold to nozzle fuel line
18	LW-12098-0-230	TUBE ASSY., Manifold to nozzle fuel line
19	LW-12098-0-240	TUBE ASSY., Manifold to nozzle fuel line
20	LW-12098-0-260	TUBE ASSY., Manifold to nozzle fuel line
21	LW-12098-0-270	TUBE ASSY., Manifold to nozzle fuel line
22	LW-12098-0-280	TUBE ASSY., Manifold to nozzle fuel line
23	LW-12098-0-300	TUBE ASSY., Manifold to nozzle fuel line
24	LW-12098-0-310	TUBE ASSY., Manifold to nozzle fuel line
25	LW-12098-0-320	TUBE ASSY., Manifold to nozzle fuel line
26	LW-12098-0-340	TUBE ASSY., Manifold to nozzle fuel line
27	LW-12098-0-350	TUBE ASSY., Manifold to nozzle fuel line
28	LW-12098-0-390	TUBE ASSY., Manifold to nozzle fuel line
29	LW-12098-0-412	TUBE ASSY., Manifold to nozzle fuel line
30	LW-13995-0-202	TUBE ASSY., Manifold to nozzle fuel line
31	LW-13995-0-224	TUBE ASSY., Manifold to nozzle fuel line
32	LW-13995-0-271	TUBE ASSY., Manifold to nozzle fuel line
33	LW-13995-0-284	TUBE ASSY., Manifold to nozzle fuel line
34	AN735-26	CLAMP
35	LW-16266-10-13*	CLAMP
36	LW-16266-10-25*	CLAMP
37	LW-16266-10-38*	CLAMP
38	LW-16266-10-44*	CLAMP
39	LW-16266-10-75*	CLAMP
40	LW-16266-25-13*	CLAMP
41	LW-16266-25-25*	CLAMP
42	LW-16266-25-38*	CLAMP
43	LW-16266-25-44*	CLAMP

44	LW-16266-25-50*	CLAMP
45	LW-16266-25-63*	CLAMP
46	LW-16266-25-75*	CLAMP
47	71824	CLAMP
48	73843	CLAMP
49	74733	CLIP
50	STD-692	SCREW, No. 10-32 x 1/2 long
51	STD-860	SCREW, No. 10-32 x 5/8 long
52	STD-921	SCREW, No. 10-32 x 7/8 long
53	STD-1925	SCREW, 1/4-20 x 5/8 long
54	STD-425	WASHER, No. 10 plain
55	STD-28	WASHER, No. 10 plain
56	STD-670	NUT, No. 10-32 self-locking
57	72815	BRACKET, 90°, Twist
58	73136	BRACKET, 90°
59	73152	BRACKET, Support clamp
60	75837	BRACKET, Fuel line support
61	76735	BRACKET, 90°
62	LW-14875	BRACKET, 90°
63	75414	BRACKET, Fuel manifold
64	76868	BRACKET, Support clamp
65	74278	BRACKET ASSY., Fuel line support
66	73626	BRACKET, Extension
67	73318	BRACKET, Extension
68	LW-25-0.81	BOLT, 1/4-20 x 13/16 long
69	STD-8	WASHER, 1/4 plain
70	STD-160	WASHER, 1/4 lock
71	STD-1411	NUT, 1/4-20 plain
72	AN735-32	CLAMP
73	AN735-36	CLAMP
74	STD-969	SCREW, No. 10-32 x 1/2 long
75	STD-251	WASHER, No. 10 lock
76	73966	SPACER
77	STD-1916	SCREW, 1/4-20 x 1-1/8 long
78	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long
79	STD-1874	SCREW, 1/4-20 x 13/16 long
80	AN4-13A	BOLT, 1/4-28 x 1-13/32 long
81	LW-12598	SLEEVE

* See page 4 for part number designation.

** P/N 73843 is superseded by P/N LW-16266-25-13.

NOTE

Aircraft quality Phillips head screws of proper length may be used in place of specified Lycoming screws.

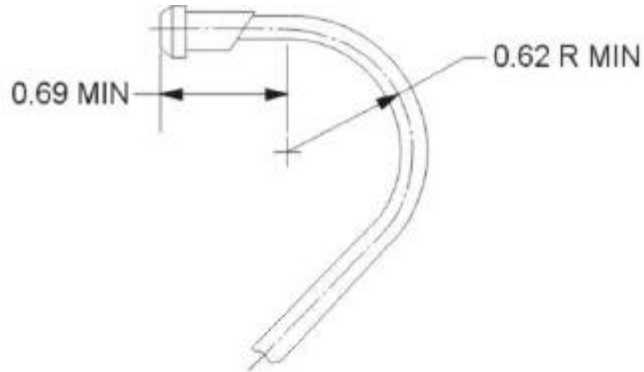


Figure 1. Fuel Line Showing Minimum Dimensions for Bending

PLEASE Note ... When installing clamps, it does not matter whether the clamp is installed to the right or left of the shroud tube, only that it is clamped at that location and there is 3/16 inch clearance between the line and any engine or airframe surface.

CLAMP P/N DESIGNATION

SCREW SIZE CLAMP DIAMETER

LW-16266-10-13

10 = #10 SCREW	-13 (.125)
	-25 (.250)
	-38 (.375)
	-44 (.438)
	-75 (.750)
25 = 1/4" SCREW	-13 (.125)
	-25 (.250)
	-38 (.375)
	-44 (.438)
	-50 (.500)
	-63 (.625)
	-75 (.750)

Diagram No. 1 -- IO-320-B1A
IO-360-B1B, B1F, B2F, B2F6, B4A, F1A, L2A, M1A
AEIO-360-B1G6, B1H, B4A, H1A, H1B

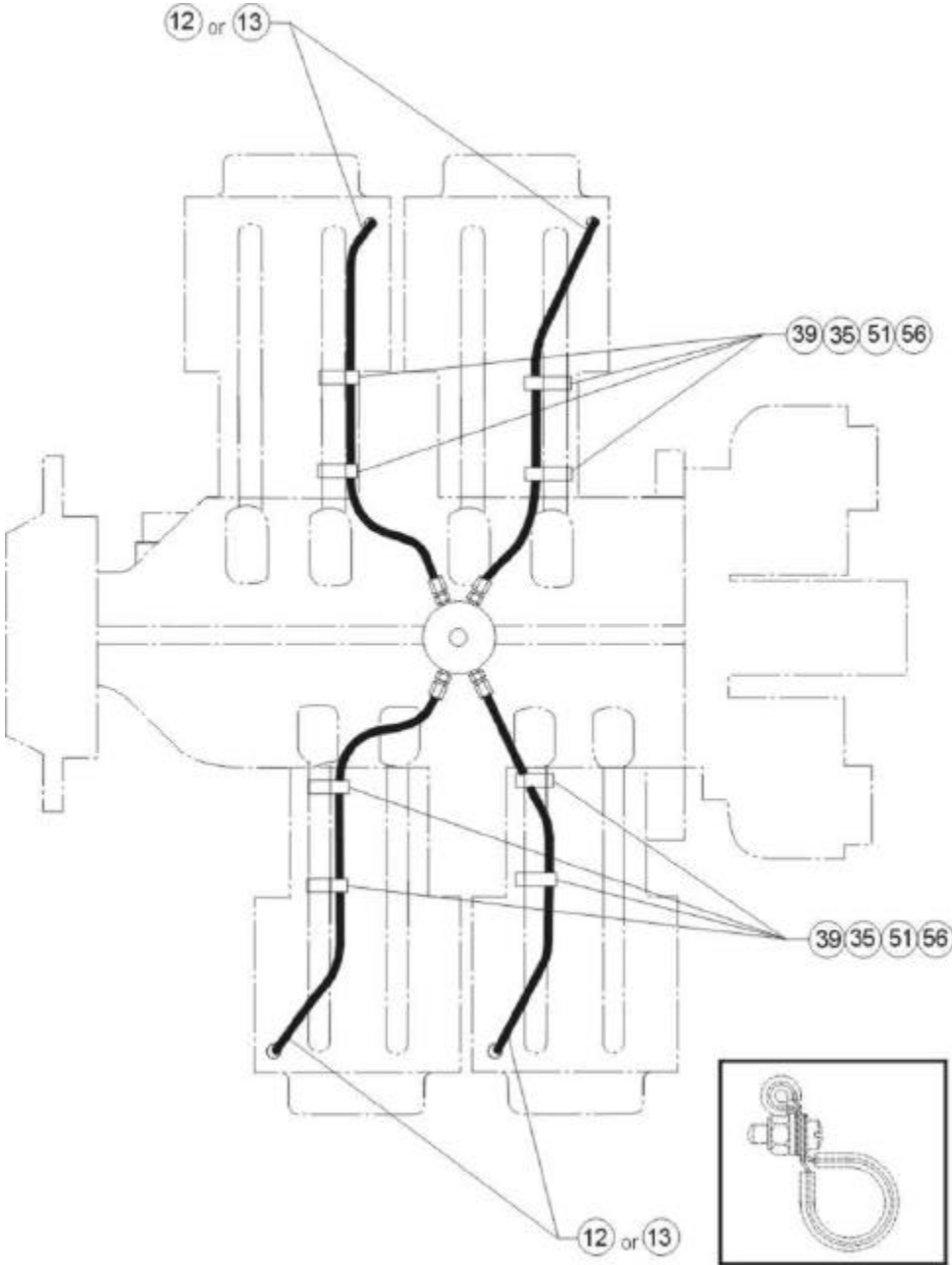


Diagram No. 2 -- IO-320-B1A, B1C, C1A, D1A, D1B, E1A, E1B, E2A, E2B
LIO-320-B1A, C1A
AEIO-320-D1B, D2B, E1B, E2B
IO-360-B1G6, C1C, C1C6, C1D6, C1E6, C1F, C1G6, C2G6
LIO-360-C1E6
HIO-360-C1A, C1B, E1AD, E1BD, F1AD
TIO-360-A1B

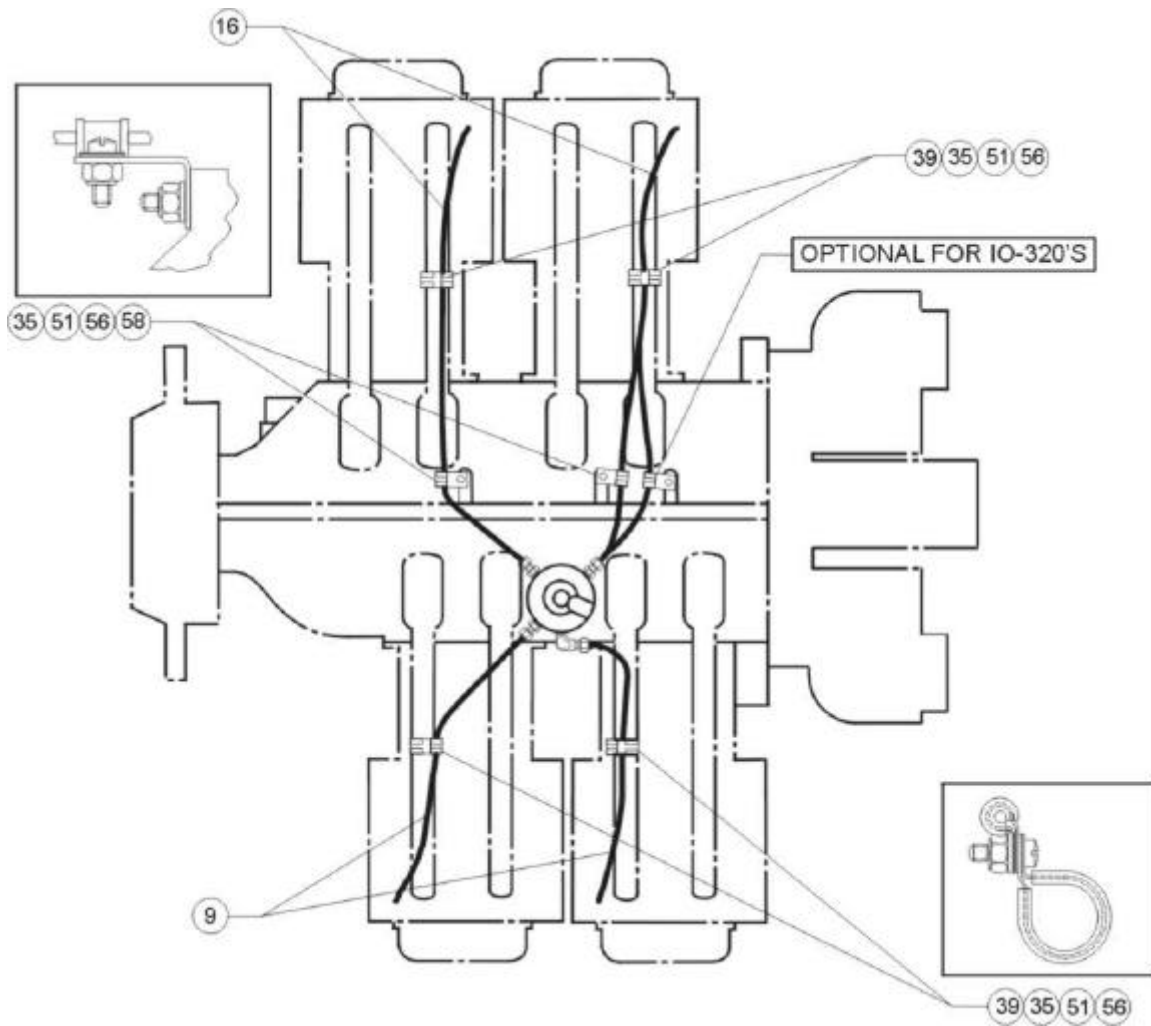


Diagram No. 3 -- IO-360-A1A, A1B, A1B6, A1B6D, A1C, A1D, A1D6, A2A, A2B, A3B6, A3B6D, B1D, B1F, B2F, C1A, C1B, C1D6, J1A6D, M1B
HIO-360-C1A, C1B
AEIO-360-A1A, A1B, A1B6, A1D, A1E, A1E6, B1F, B2F

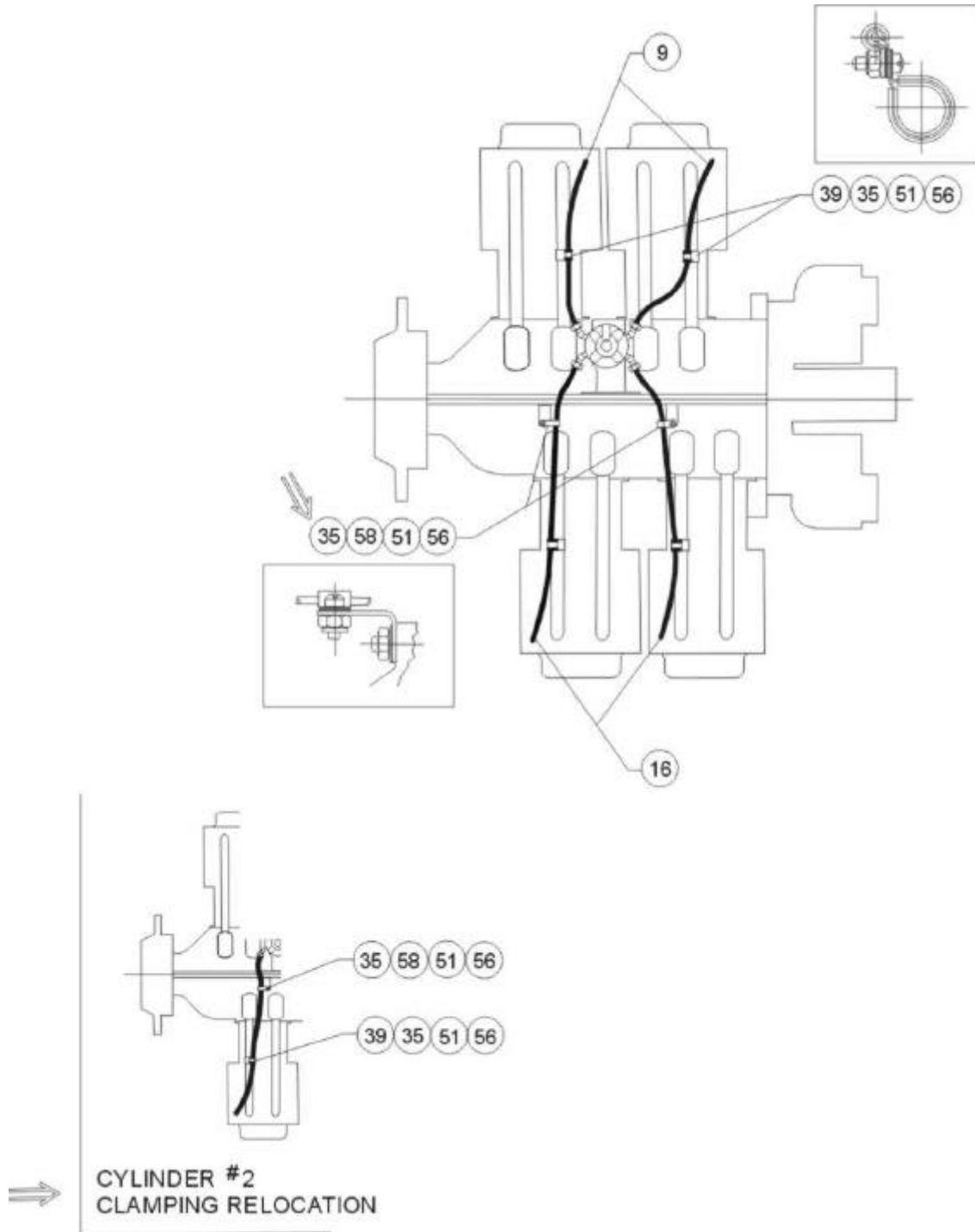


Diagram No. 4 -- IO-360-B1E

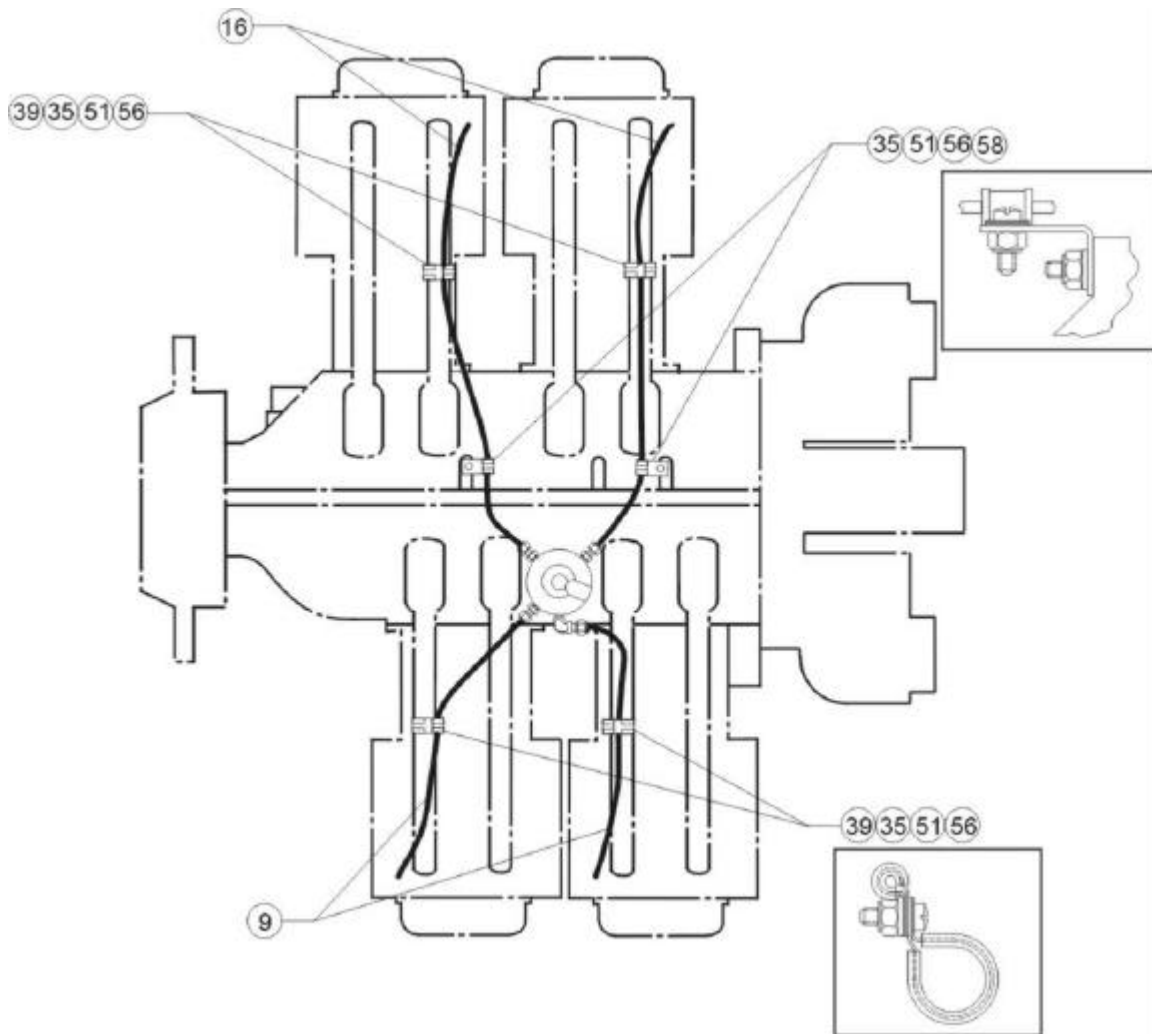


Diagram No. 5 -- HIO-360-A1A

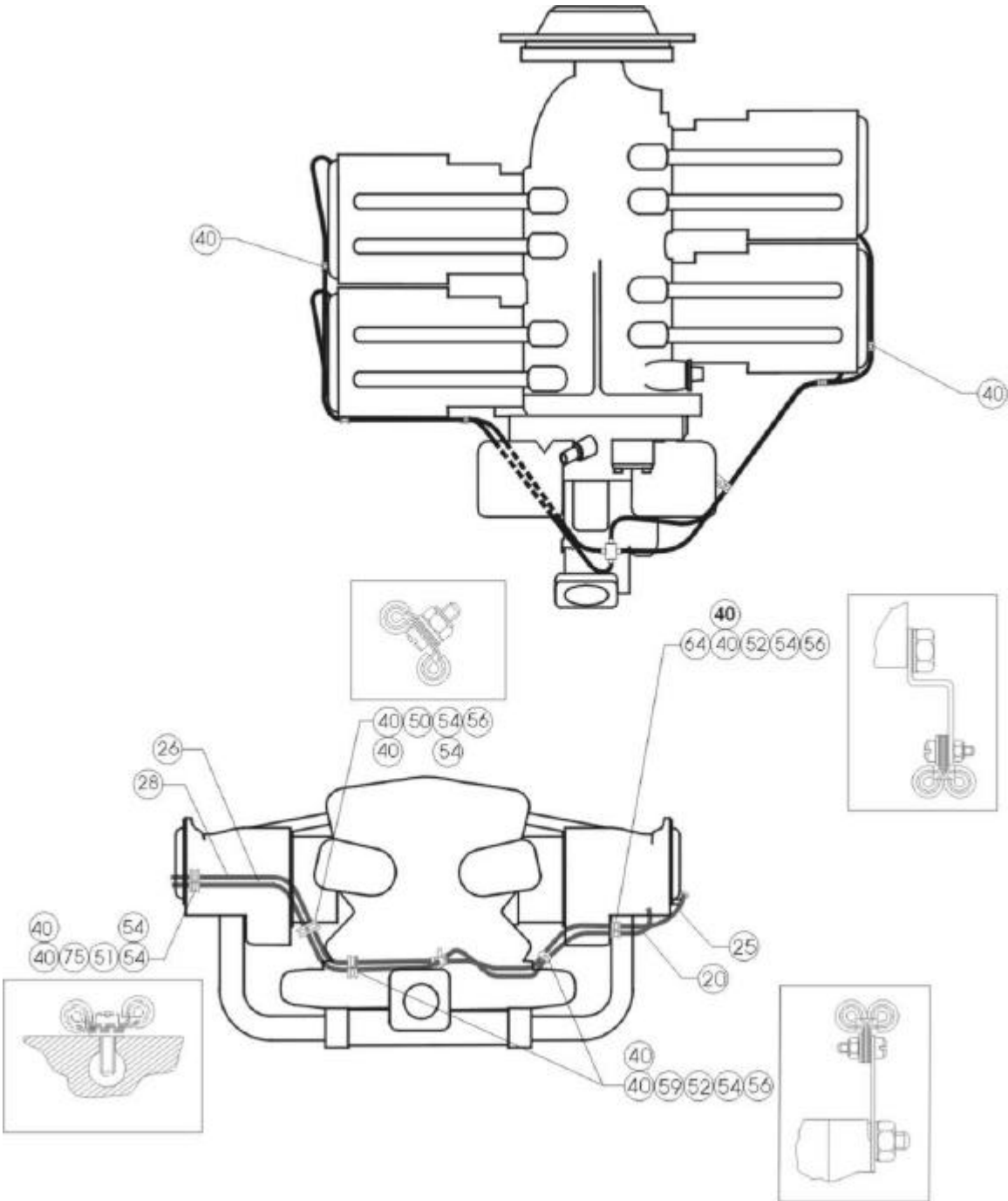


Diagram No. 6 -- HIO-360-A1B

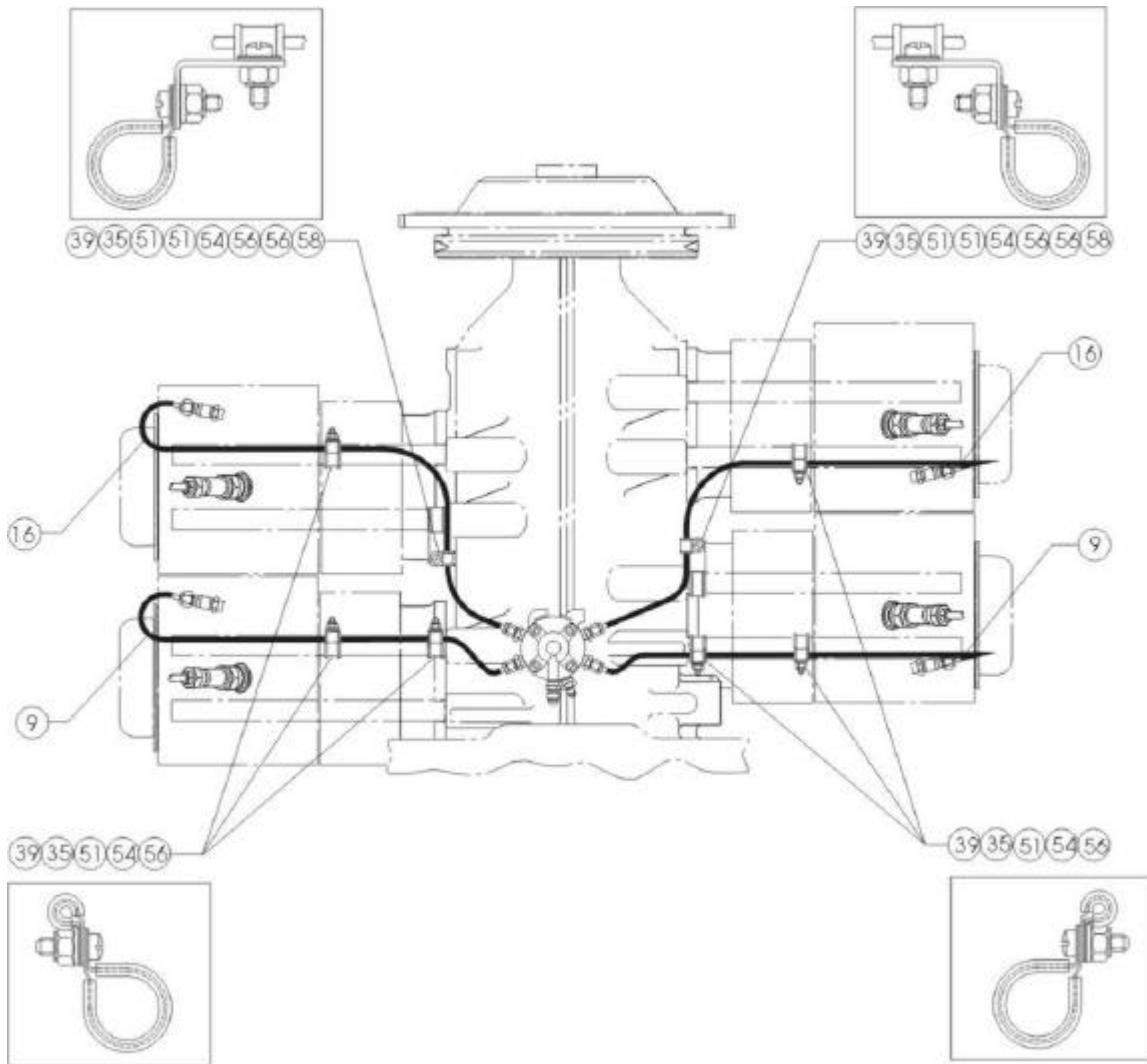


Diagram No. 7 -- HIO-360-B1A (View 1 of 3) Rosette Installation

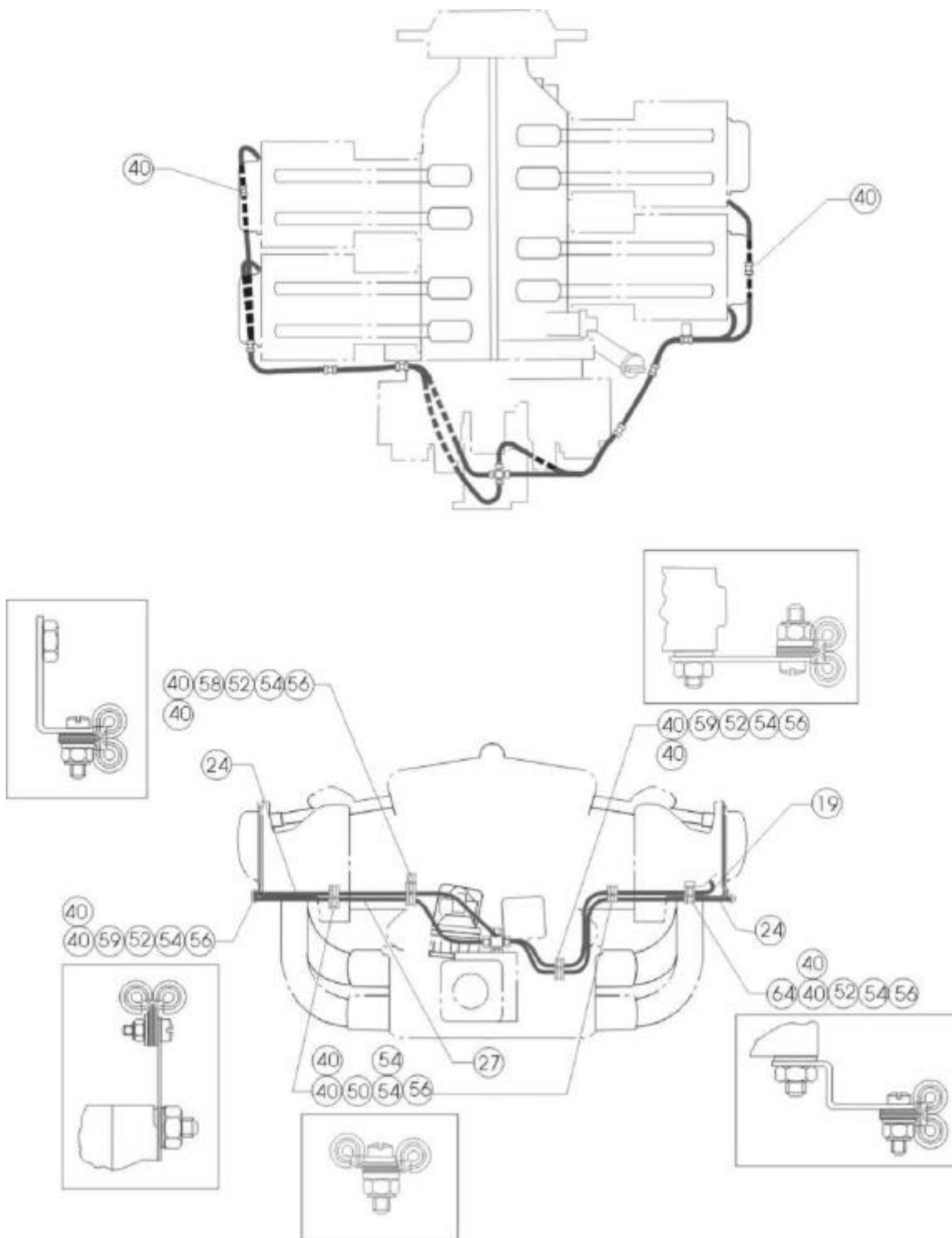


Diagram No. 8 -- HIO-360-B1A (View 2 of 3) LW-12155 Manifold Assy., Fuel

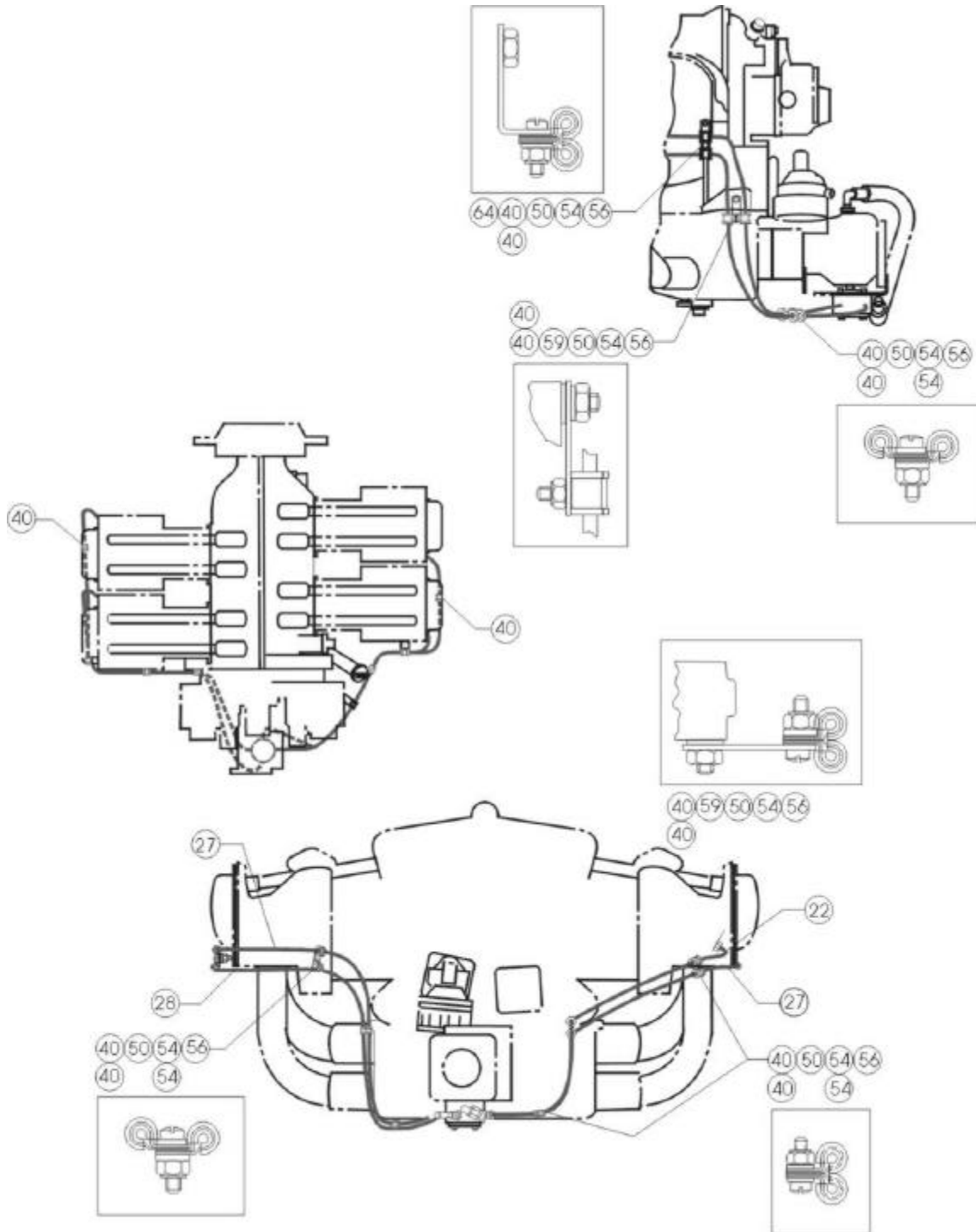


Diagram No. 9 -- HIO-360-B1A (View 3 of 3) 75282 Manifold Assy., Fuel

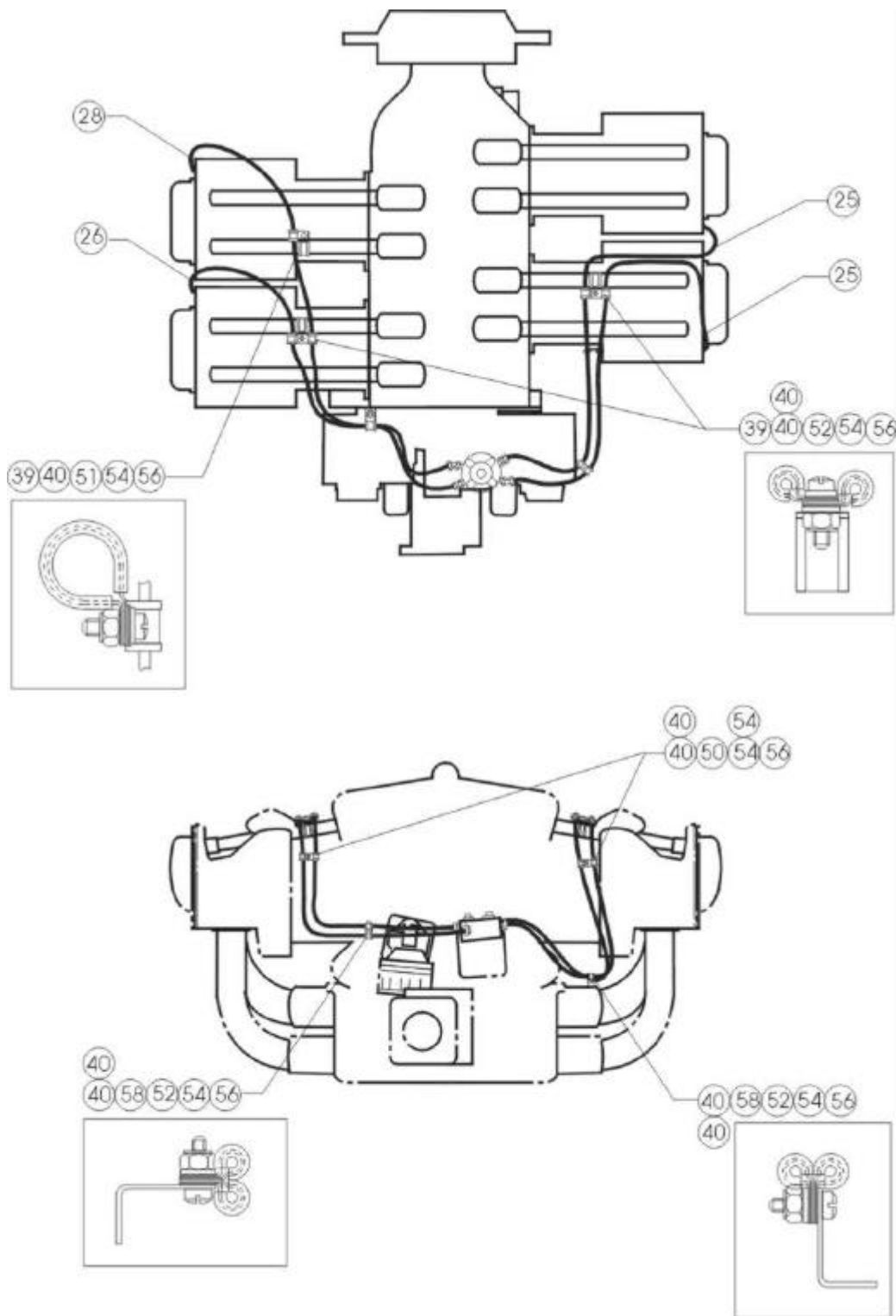


Diagram No. 10 -- HIO-360-D1A

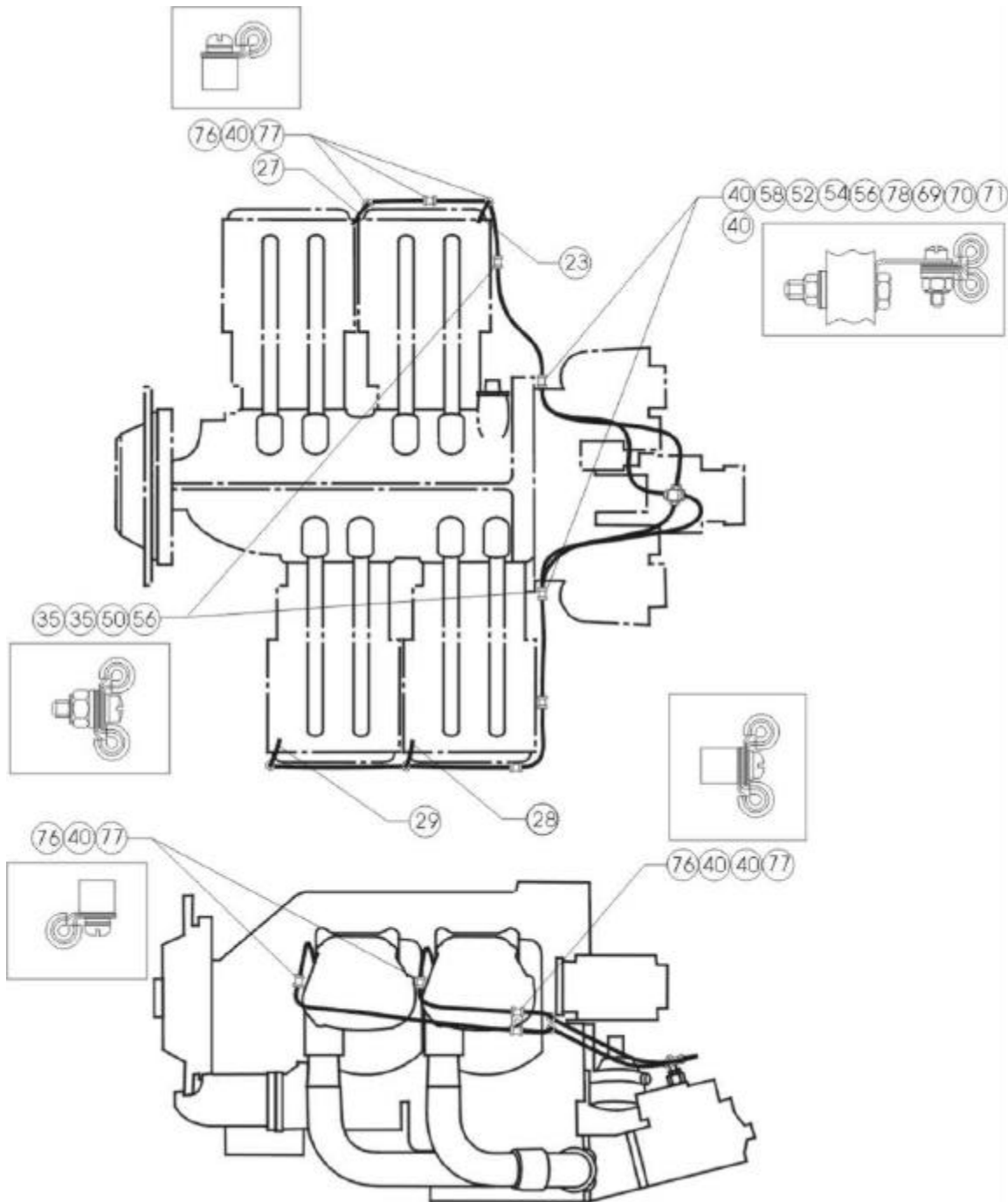


Diagram No. 10A -- HIO-360-G1A

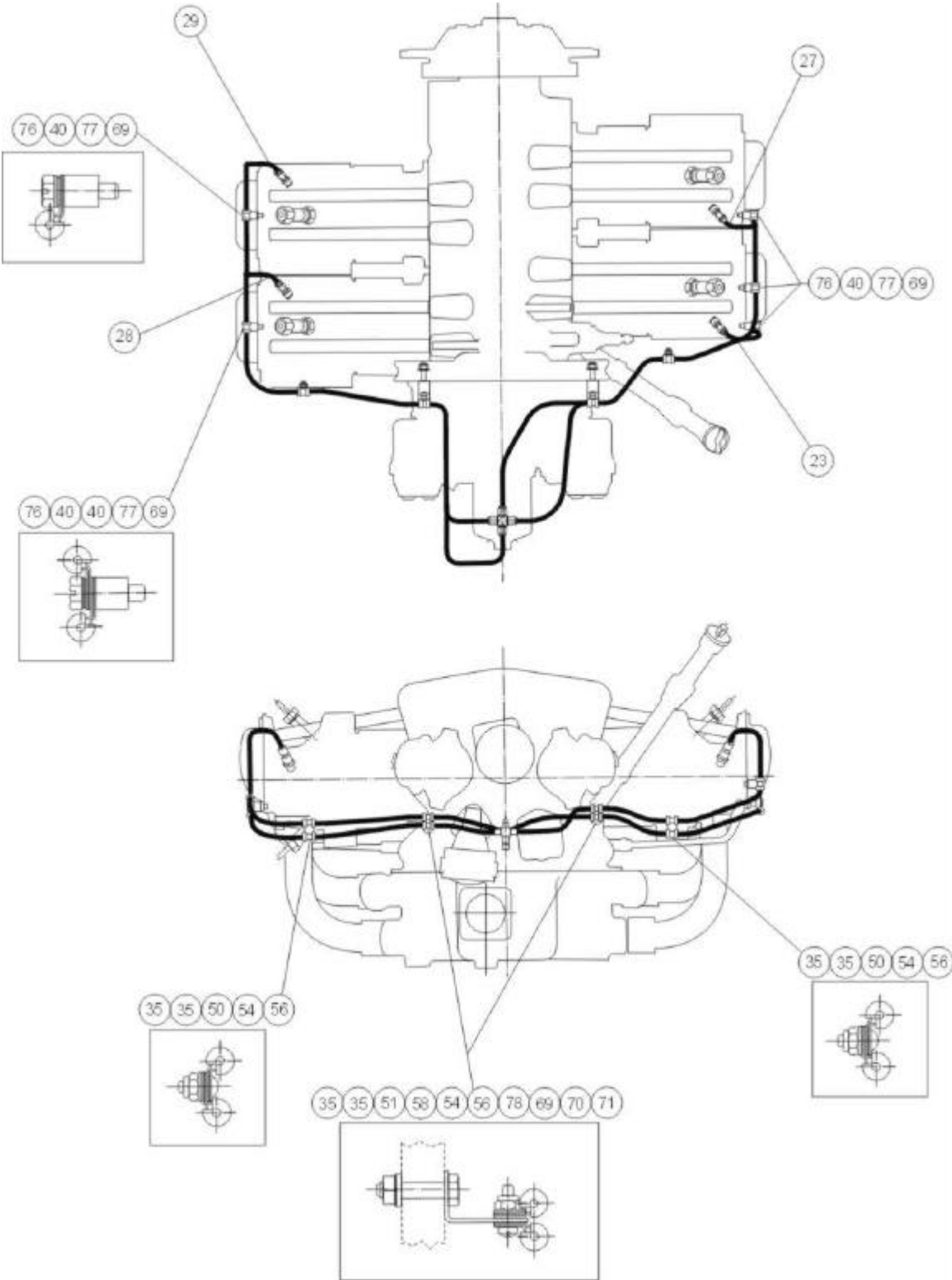


Diagram No. 11 -- AIO-320-A1B, B1B, C1B
AIO-360-A1A, A1B, B1B

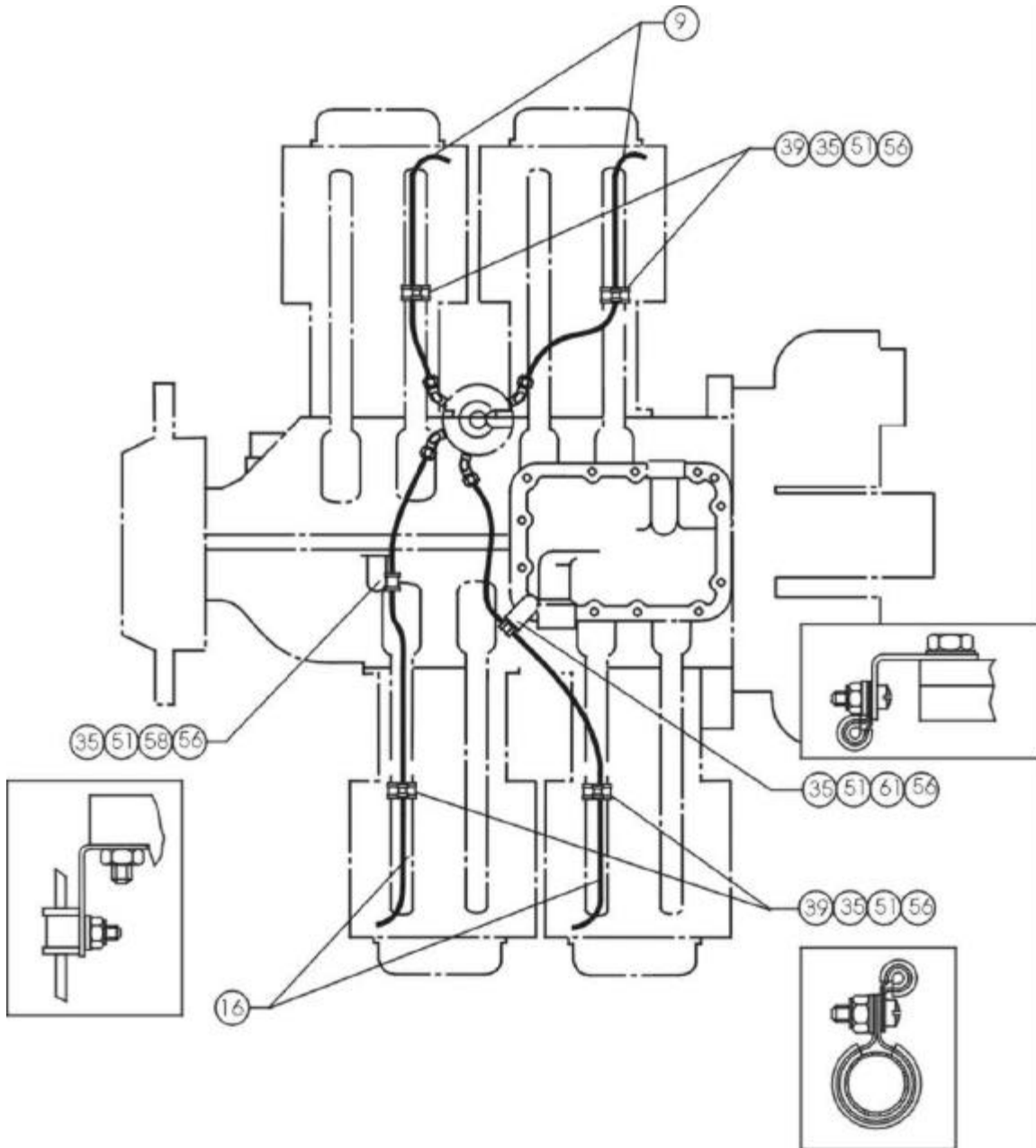


Diagram No. 12 -- TIO-360-C1A6D (View 1 of 3)

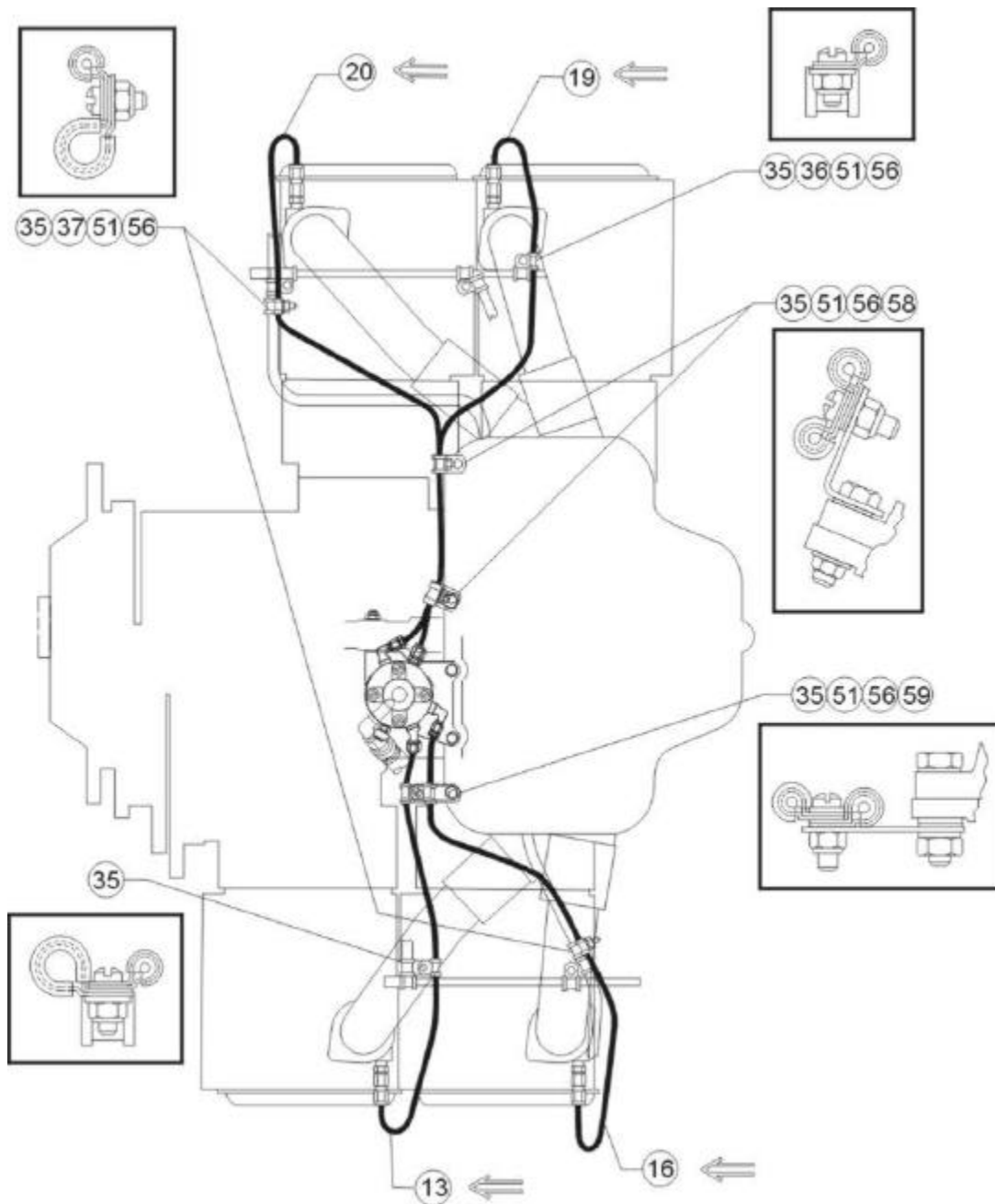


Diagram No. 13 -- TIO-360-C1A6D (View 2 of 3)

Optional Routing for Clearance

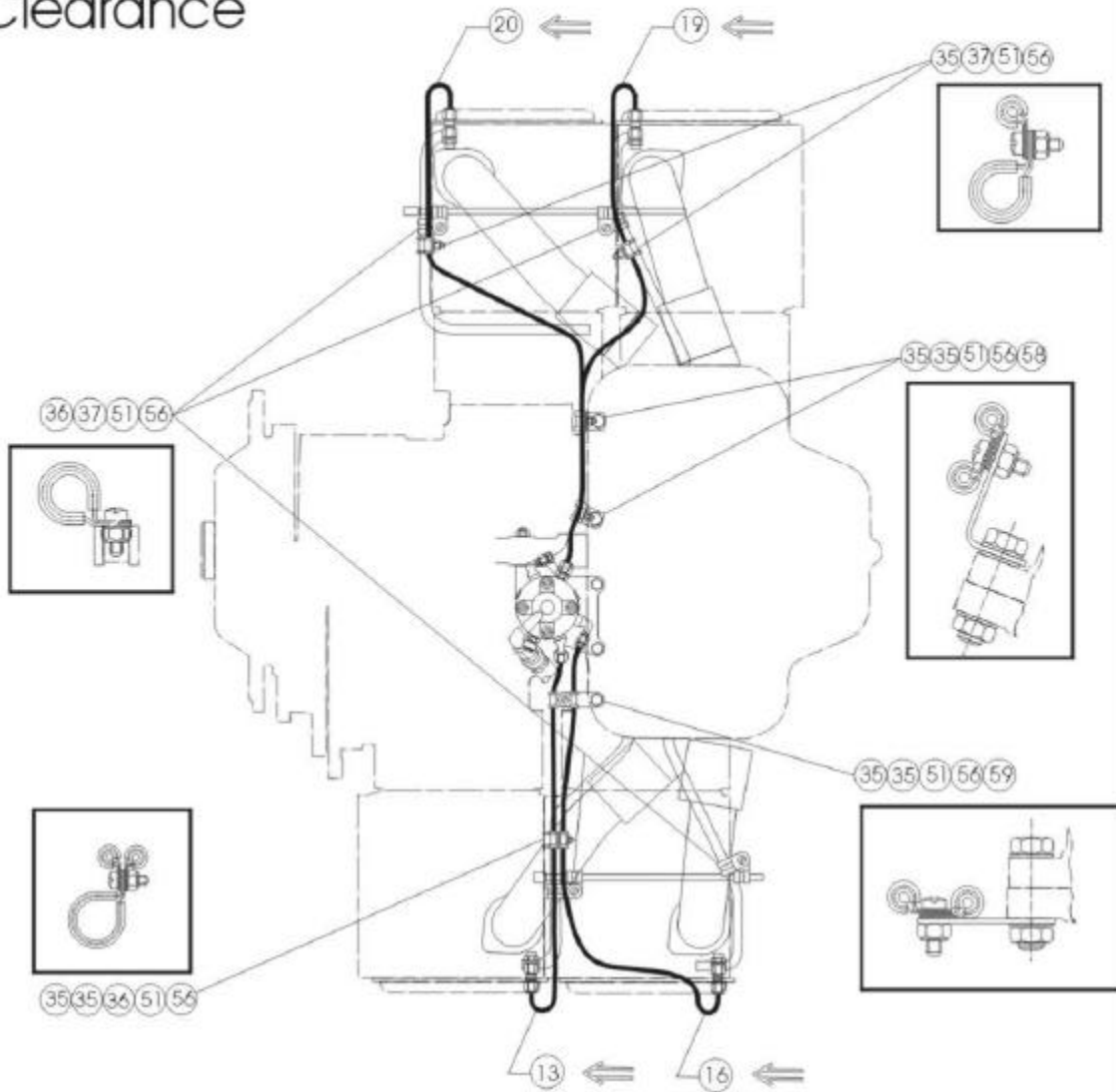


Diagram No. 14 -- TIO-360-C1A6D (View 3 of 3)

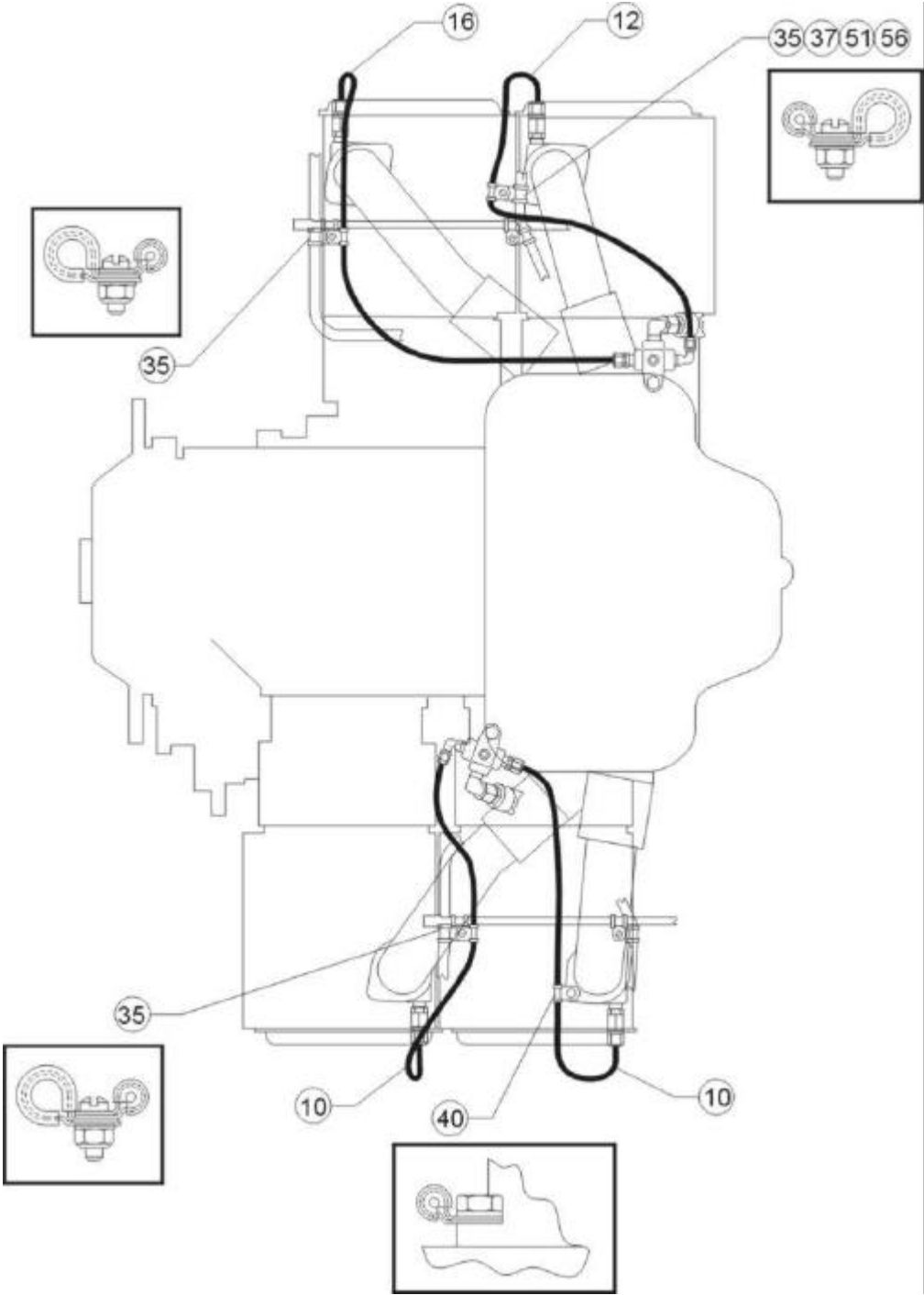


Diagram No. 15 -- IVO-360-A1A

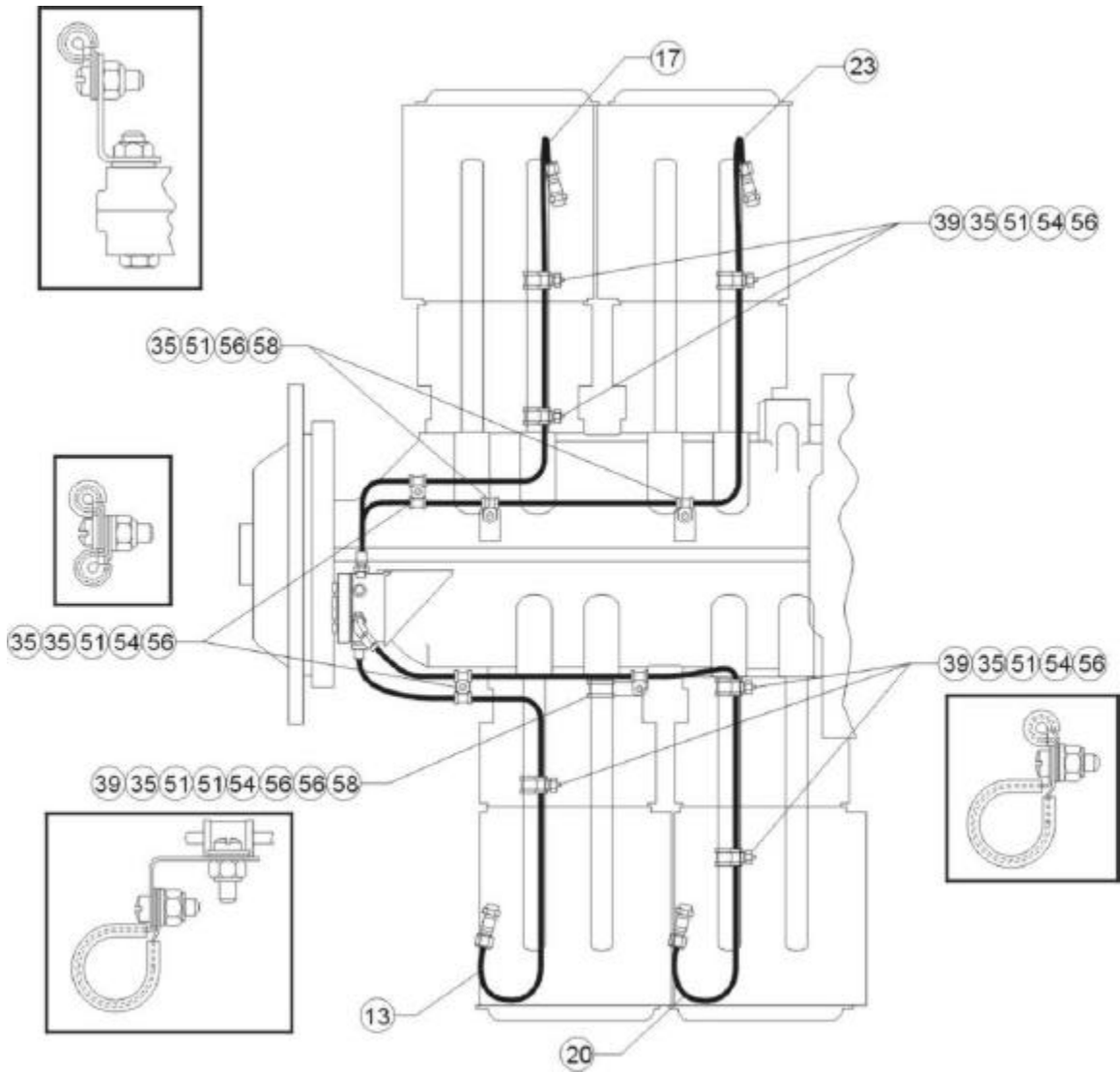


Diagram No. 16 -- IGO-480-A1B6

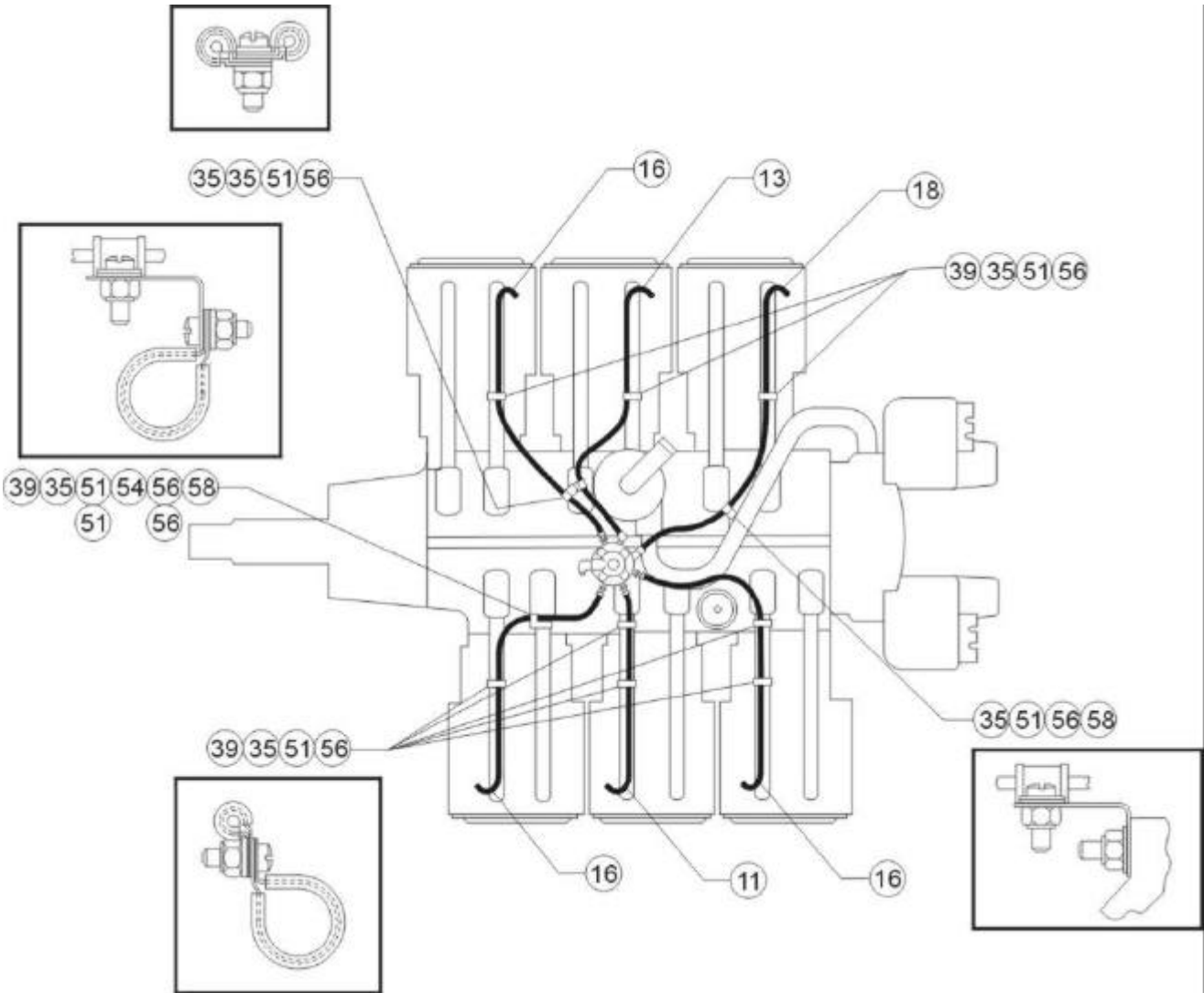


Diagram No. 17 -- IO-540-C4D5D, G1C5, K1A5, K1A5D, K1B5, K1F5, K1F5D, K1G5, K1G5D, K1H5, K1J5D, K1K5, AA1B5

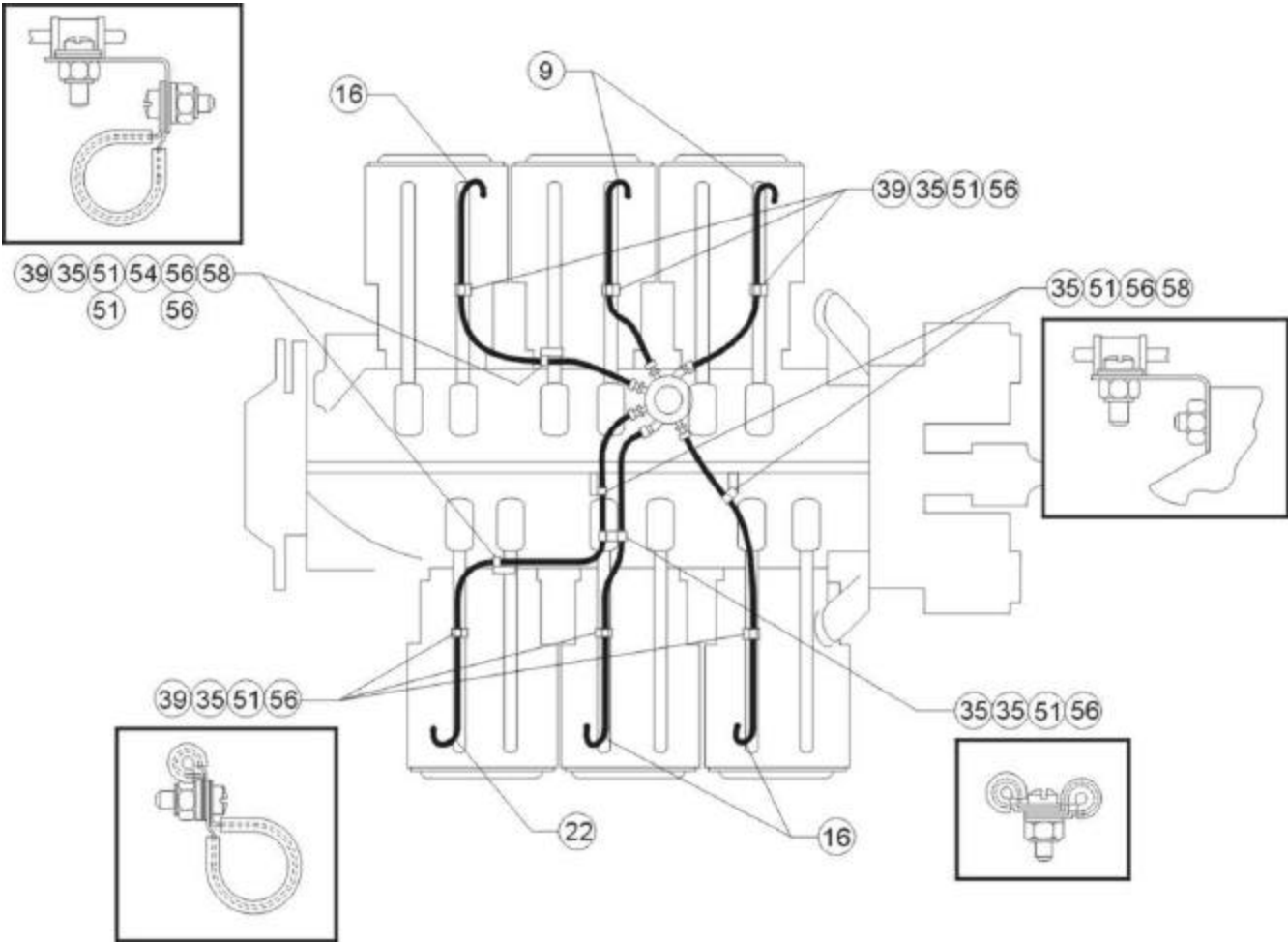


Diagram No. 18 -- IO-540-A1A5, G1A5, G1B5, G1D5, G1E5, G1F5, K1A5, K1B5, K1C5, K1D5, K1E5, K1E5D, K1F5, K1H5, K1J5, P1A5, S1A5, T4A5D, T4B5, T4B5D, T4C5D, AA1A5
 TIO-540-U2A, AE2A, AH1A
 LTIO-540-U2A

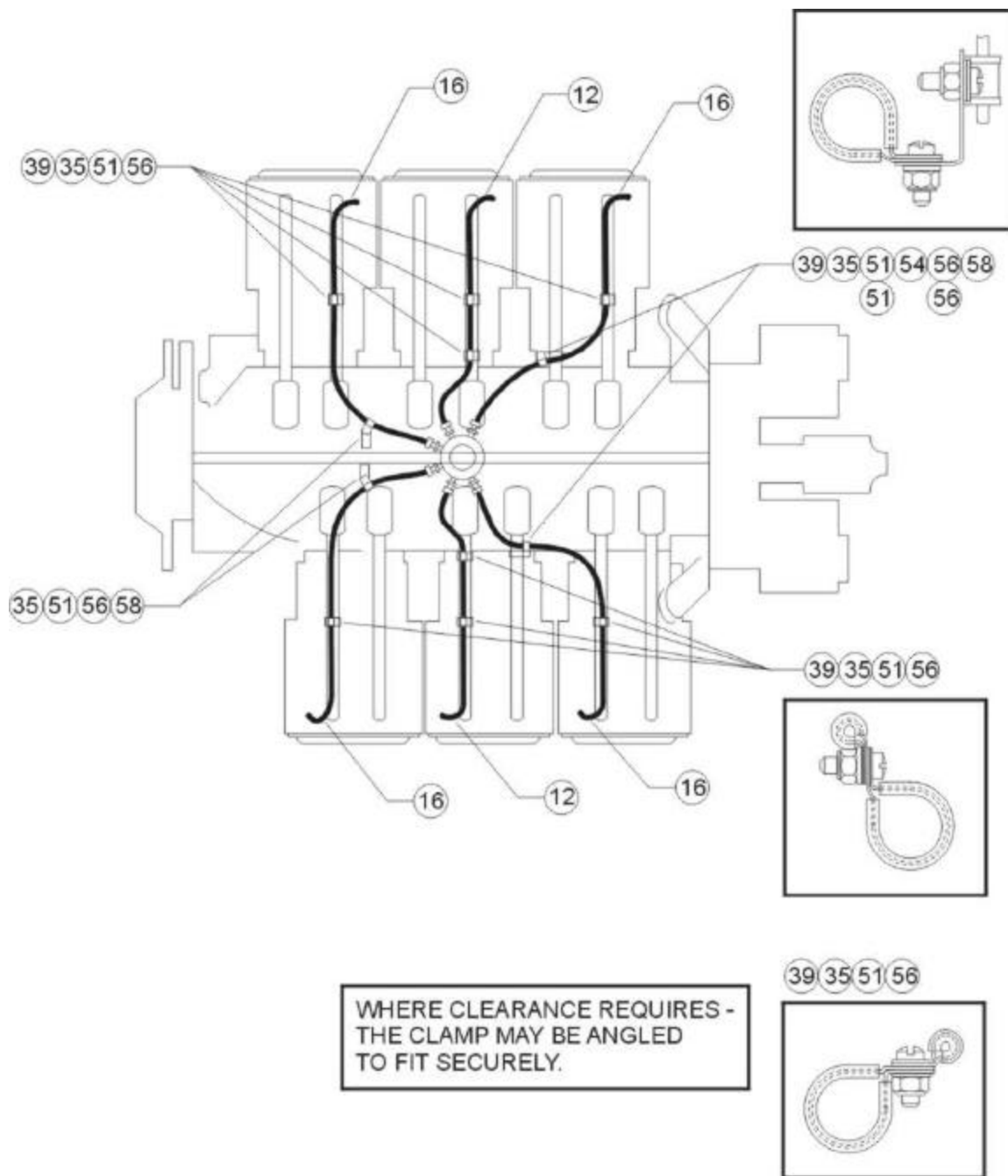


Diagram No. 18A -- IO-540-AE1A5

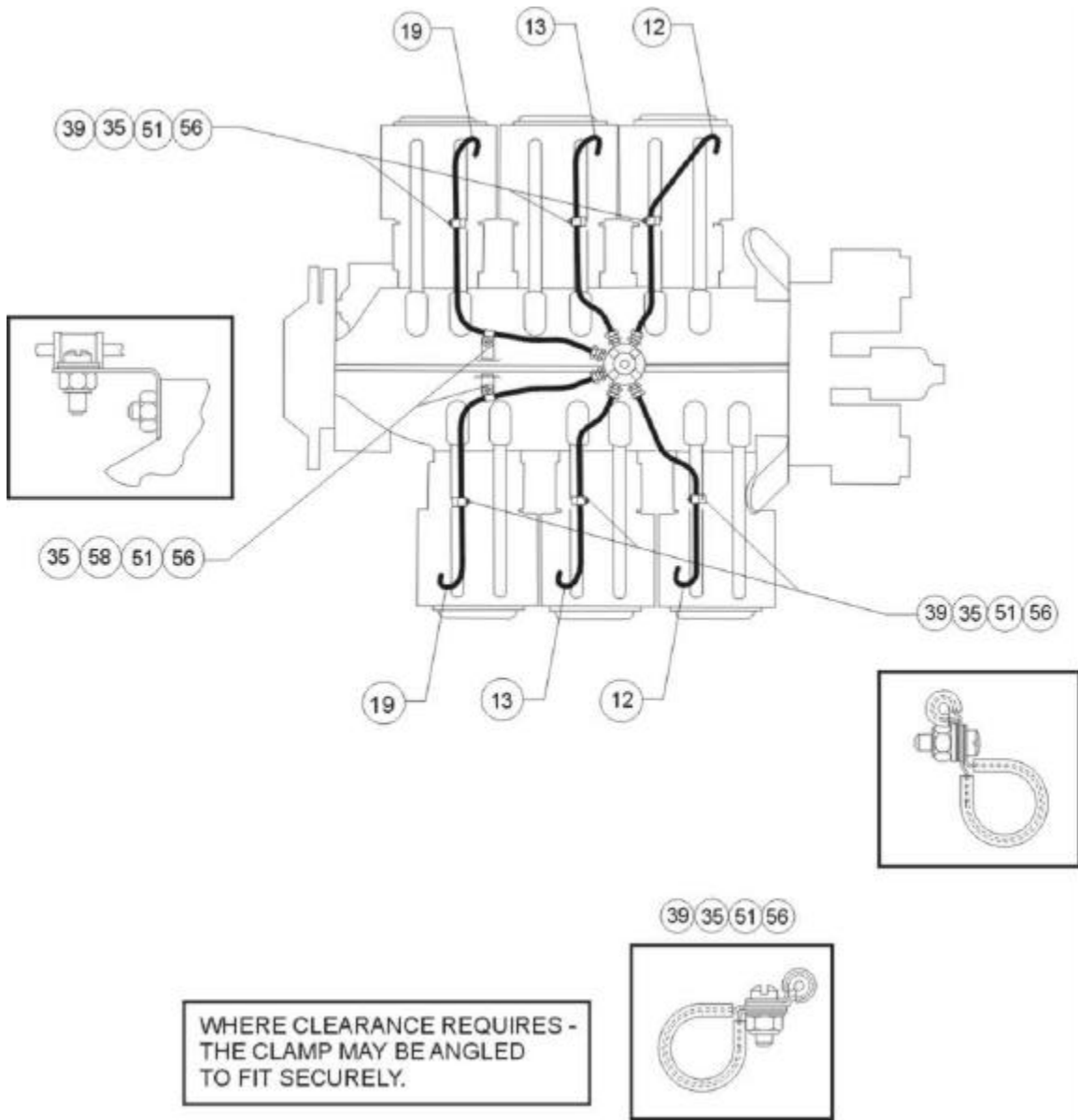


Diagram No. 19 -- AEIO-540-D4D5
TIO-540-AF1A, AF1B, AG1A, AA1AD, AB1BD

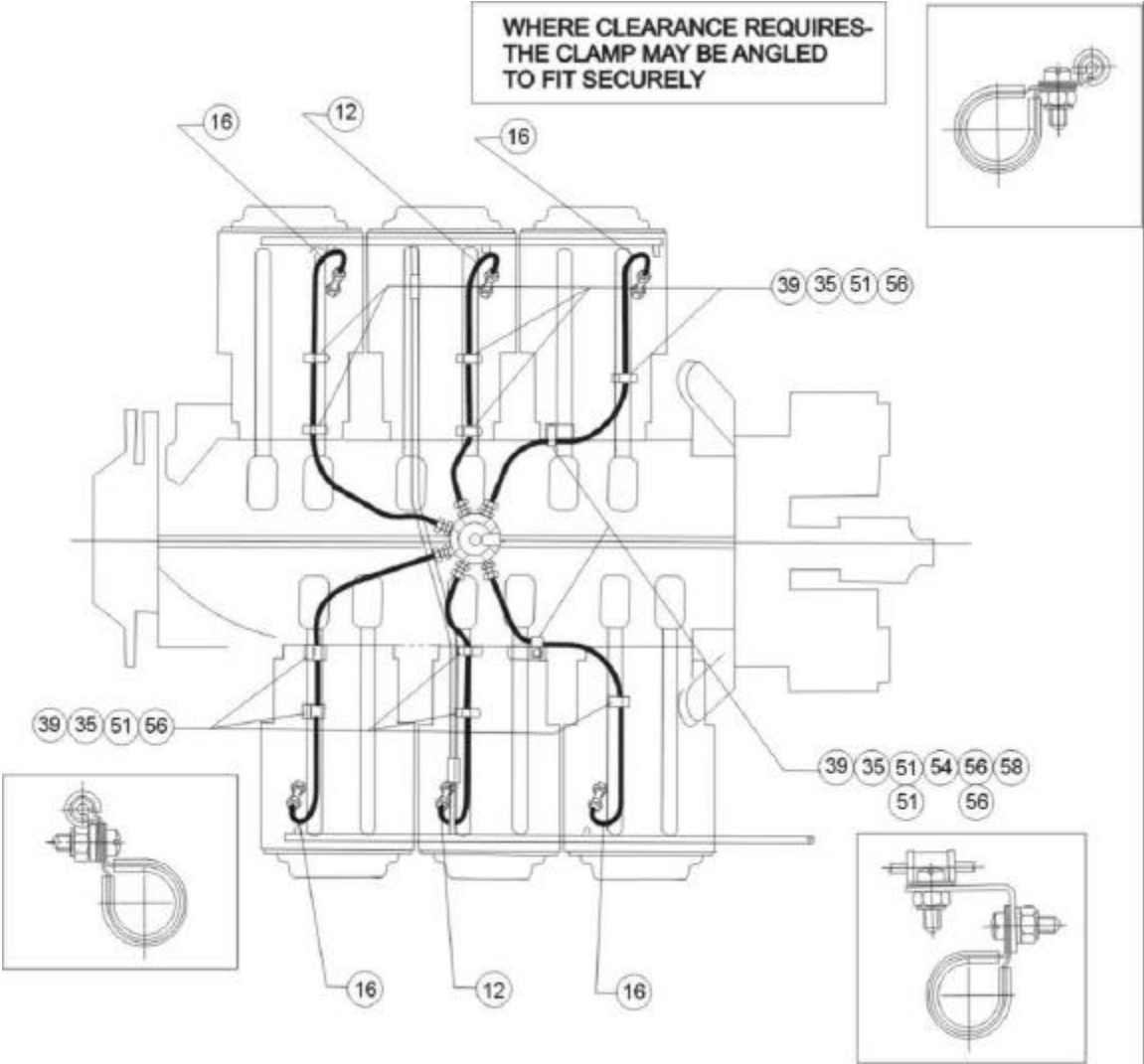
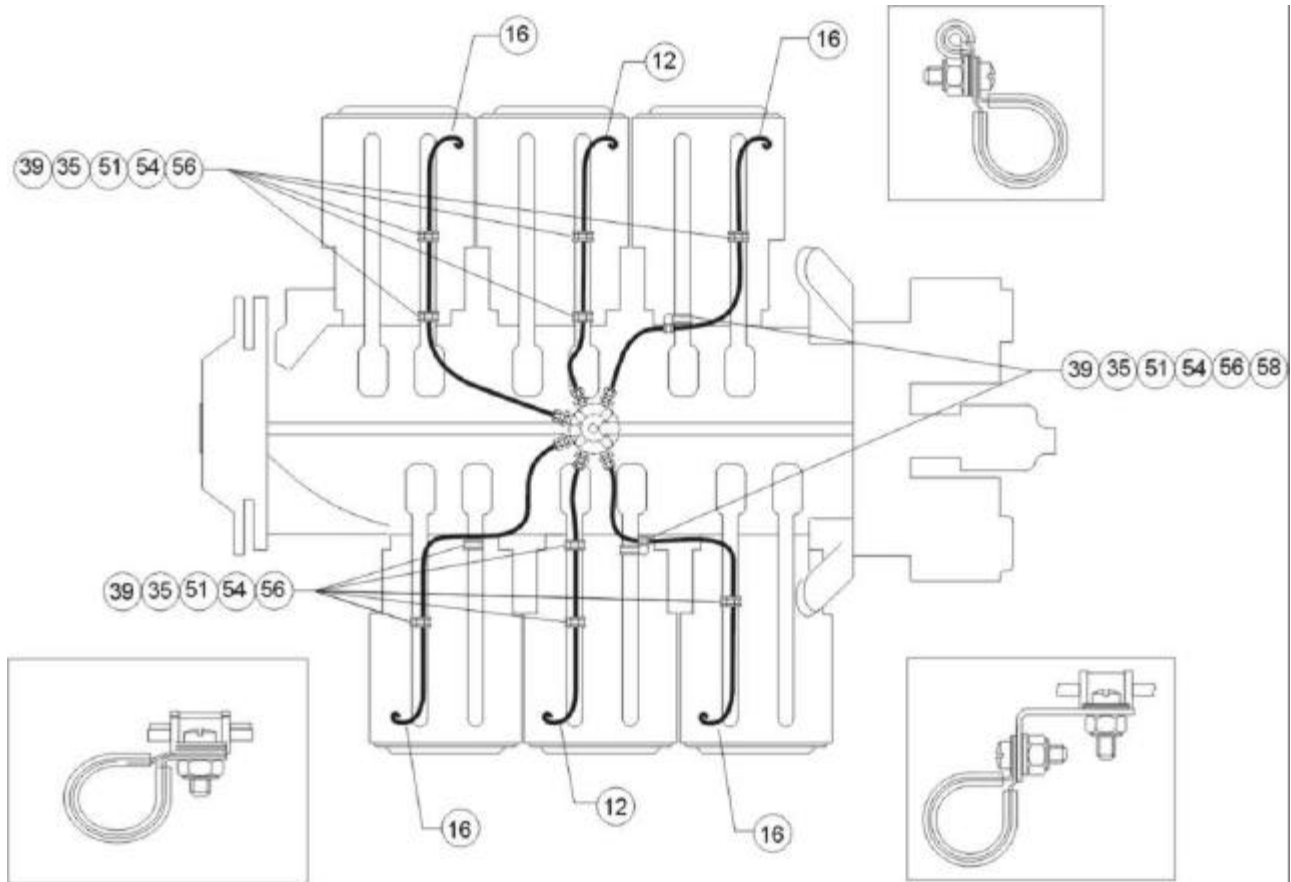


Diagram No. 19A -- IO-540-AB1A5
TIO-540-AK1A



WHERE CLEARANCE REQUIRES -
THE CLAMP MAY BE ANGLED TO
FIT SECURELY.

Diagram No. 20 -- IO-540-AC1A5
TIO-540-AJ1A

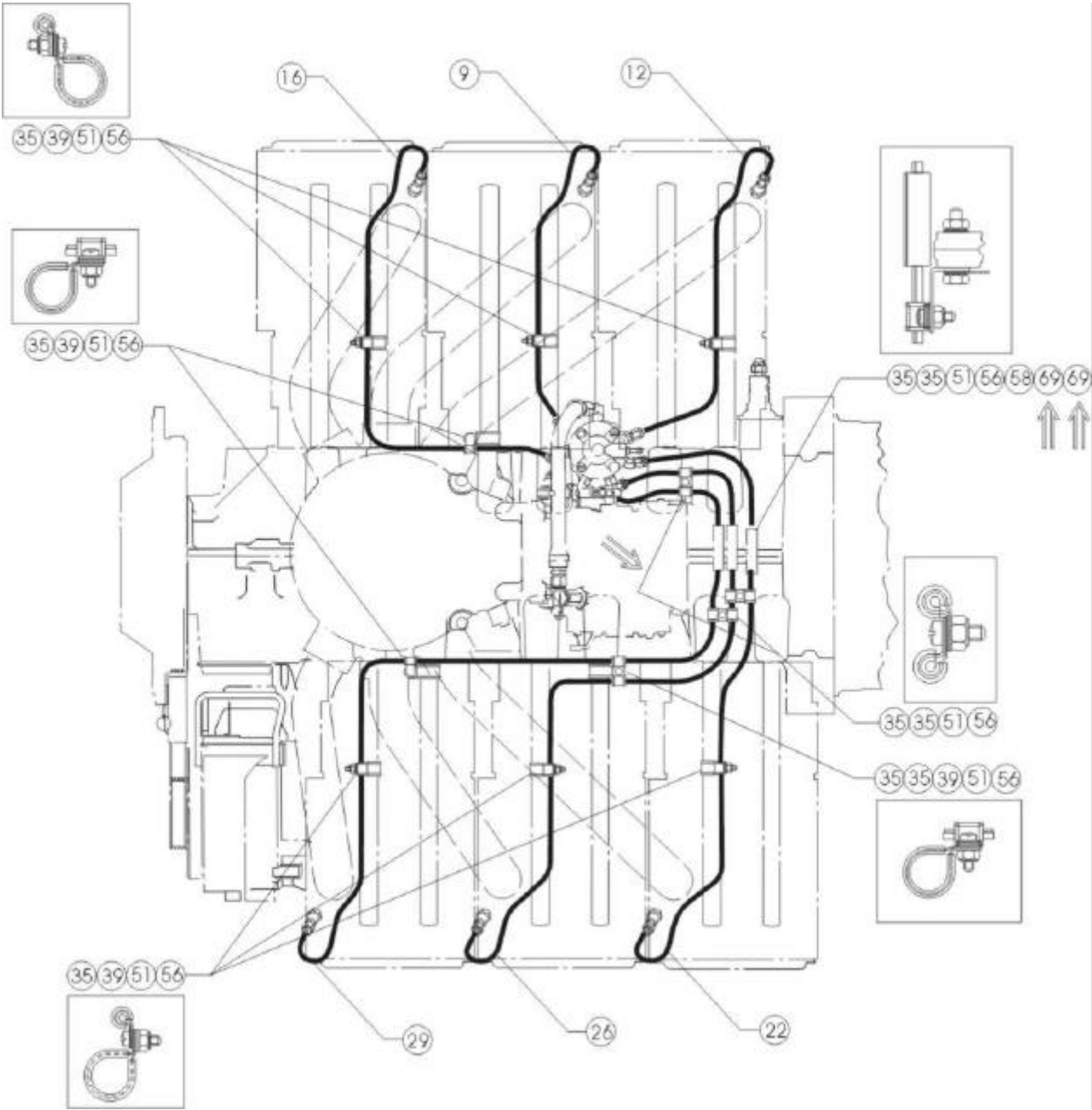


Diagram No. 21 -- IO-540-A1A5, C1B5, C4B5, C4D5D, D4A5, J4A5, L1C5, AB1A5
TIO-540-C1A, E1A, G1A, AB1AD
AEIO-540-D4A5, D4B5, L1B5, L1B5D, L1D5

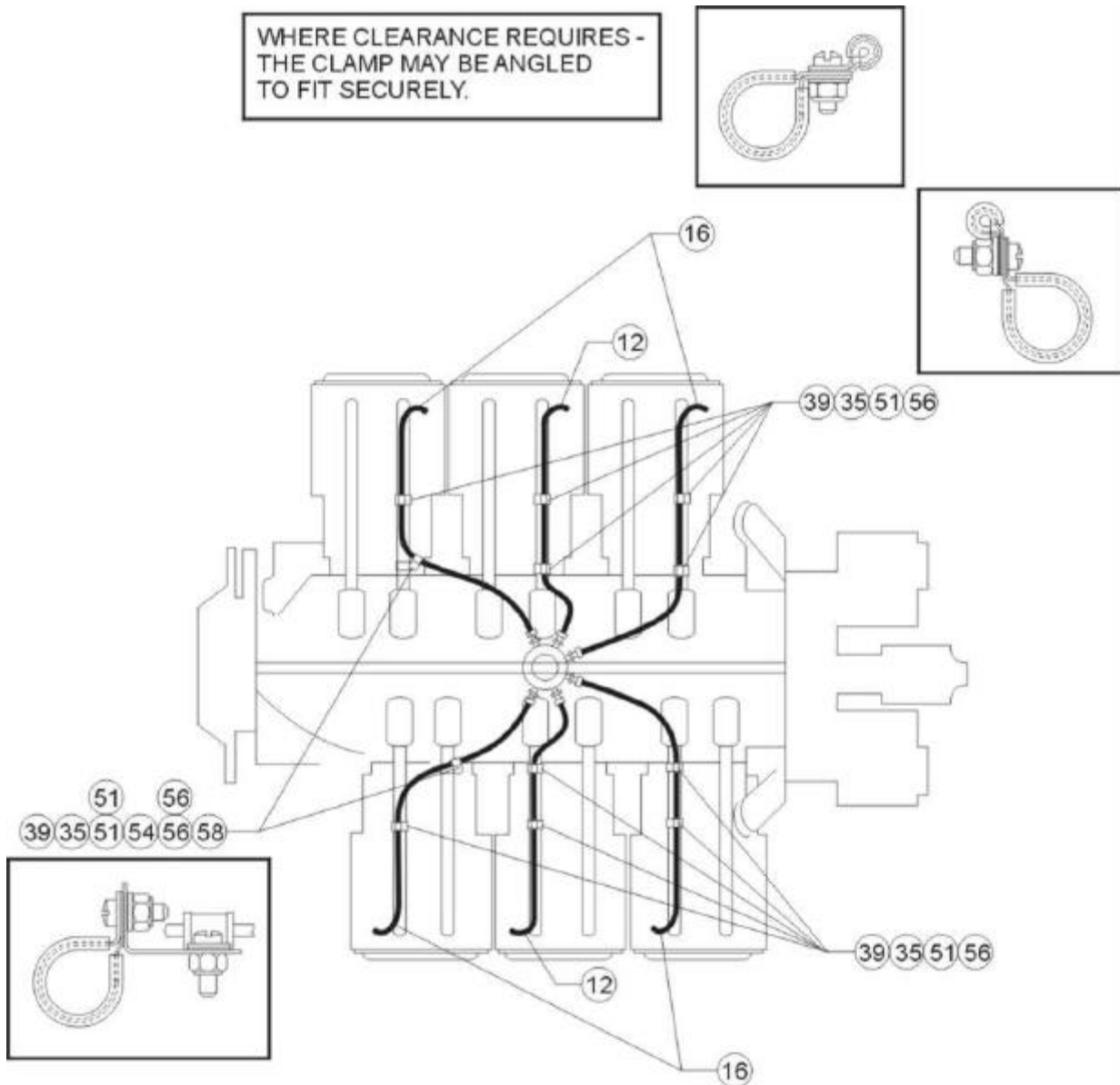


Diagram No. 21A -- IO-540-N1A5, R1A5, V4A5, V4A5D, W1A5, W1A5D, W3A5D

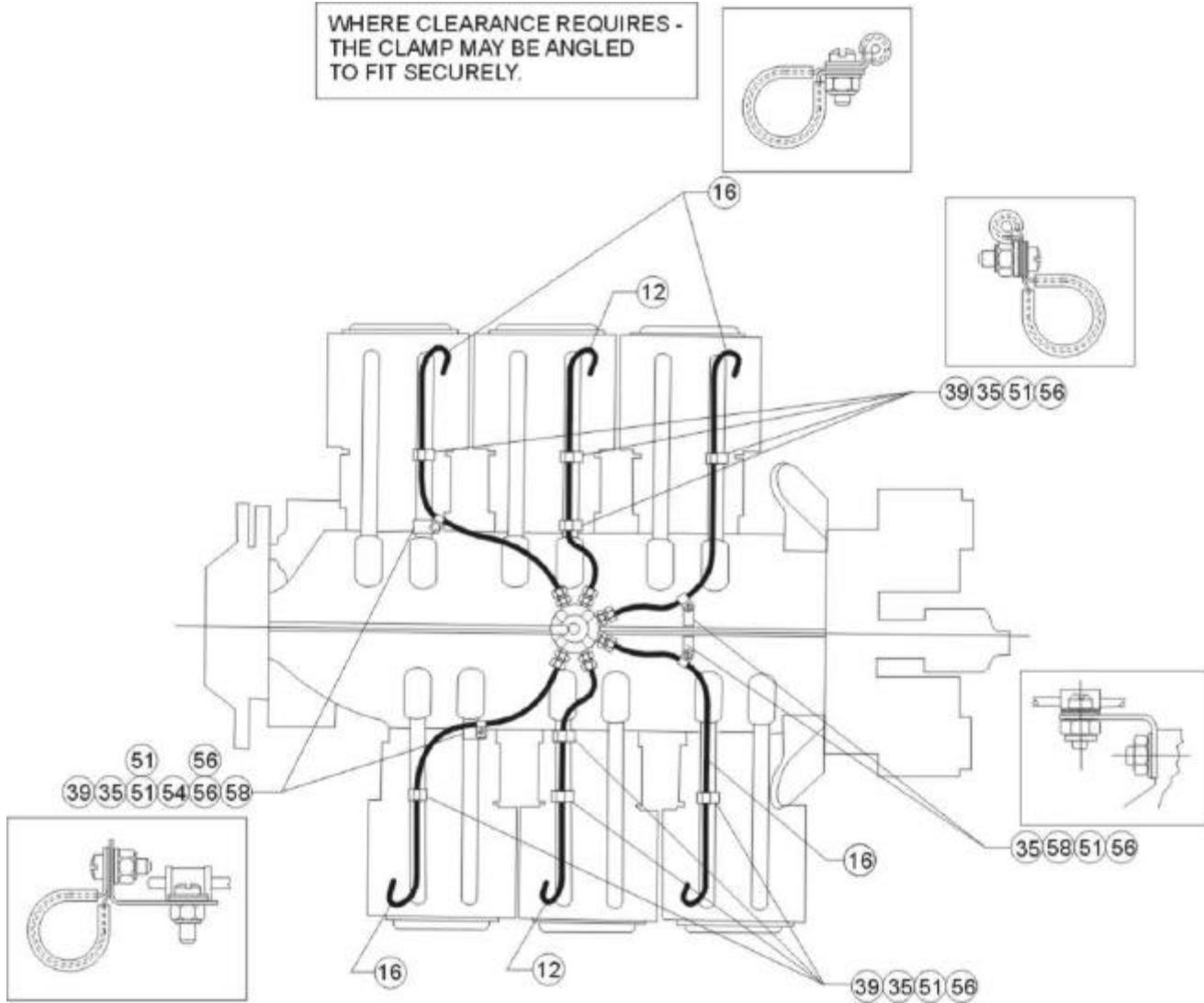


Diagram No. 22 -- IO-540-B1A5, B1C5, E1A5, E1B5

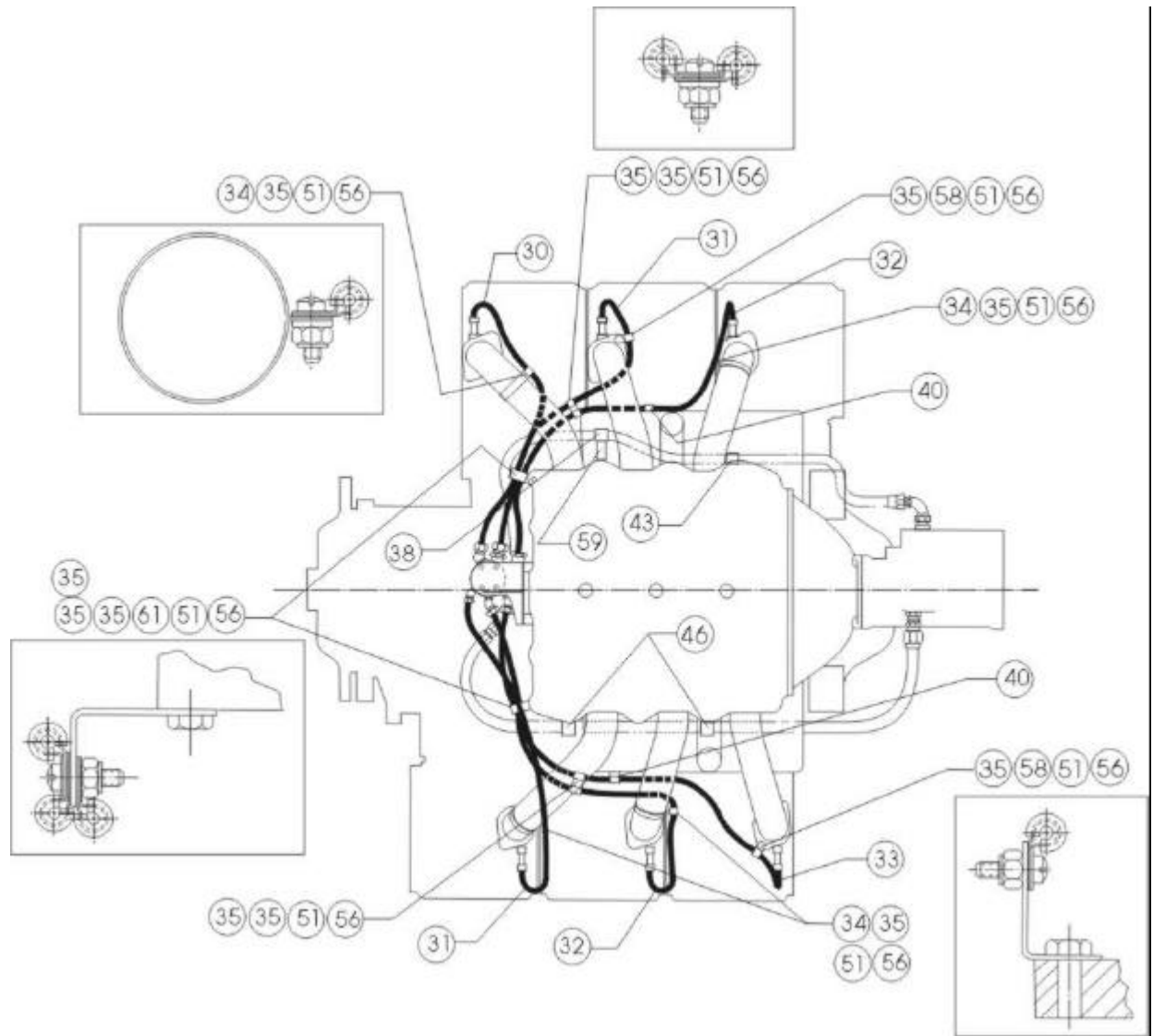


Diagram No. 23 -- TIO-540-A1A, A1B, A2A, A2B, A2C, F2BD, J2B, J2BD, N2BD, R2AD
LTIO-540-F2BD, J2B, J2BD, N2BD, R2AD

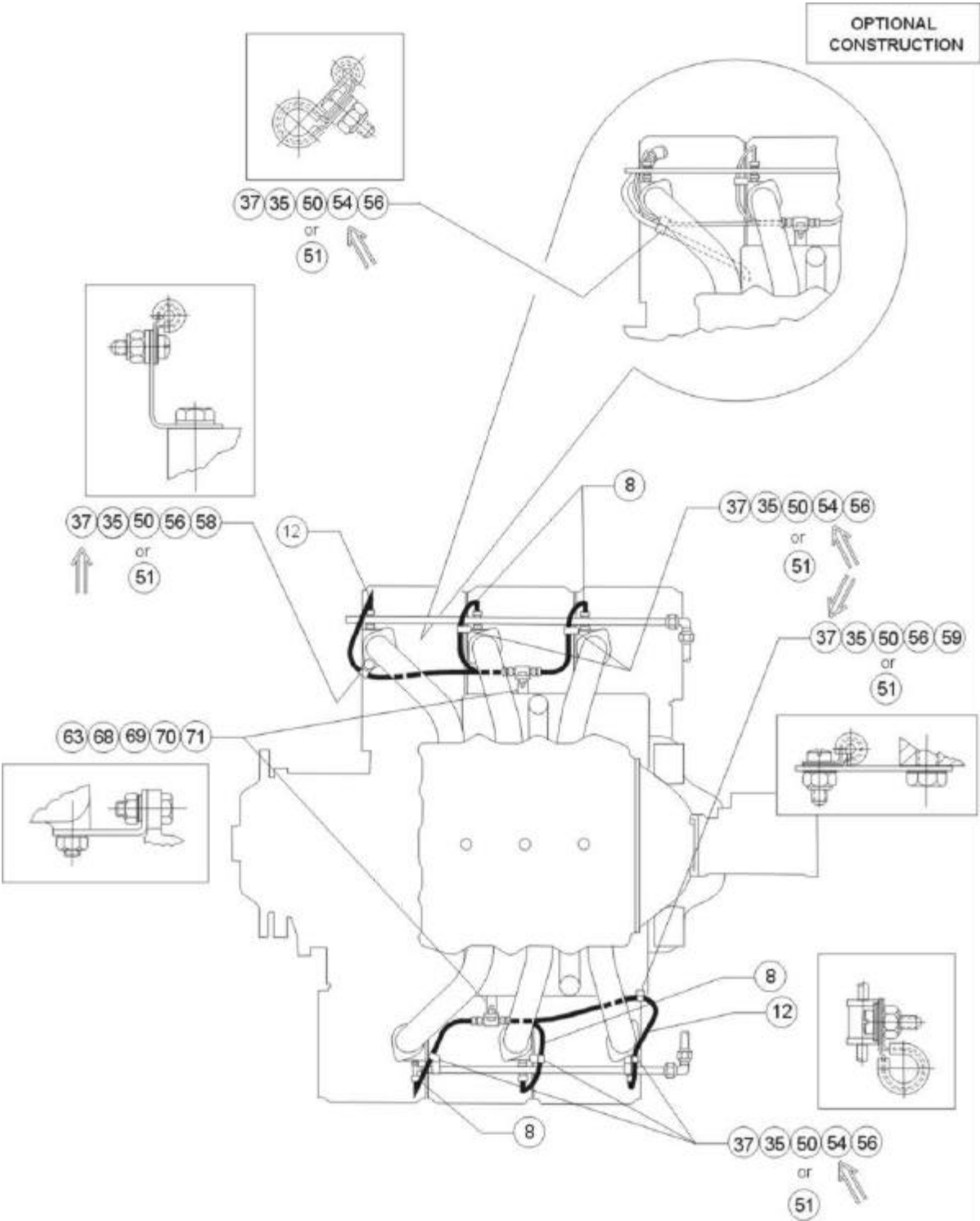


Diagram No. 24 -- IO-540-M1A5, M1B5D

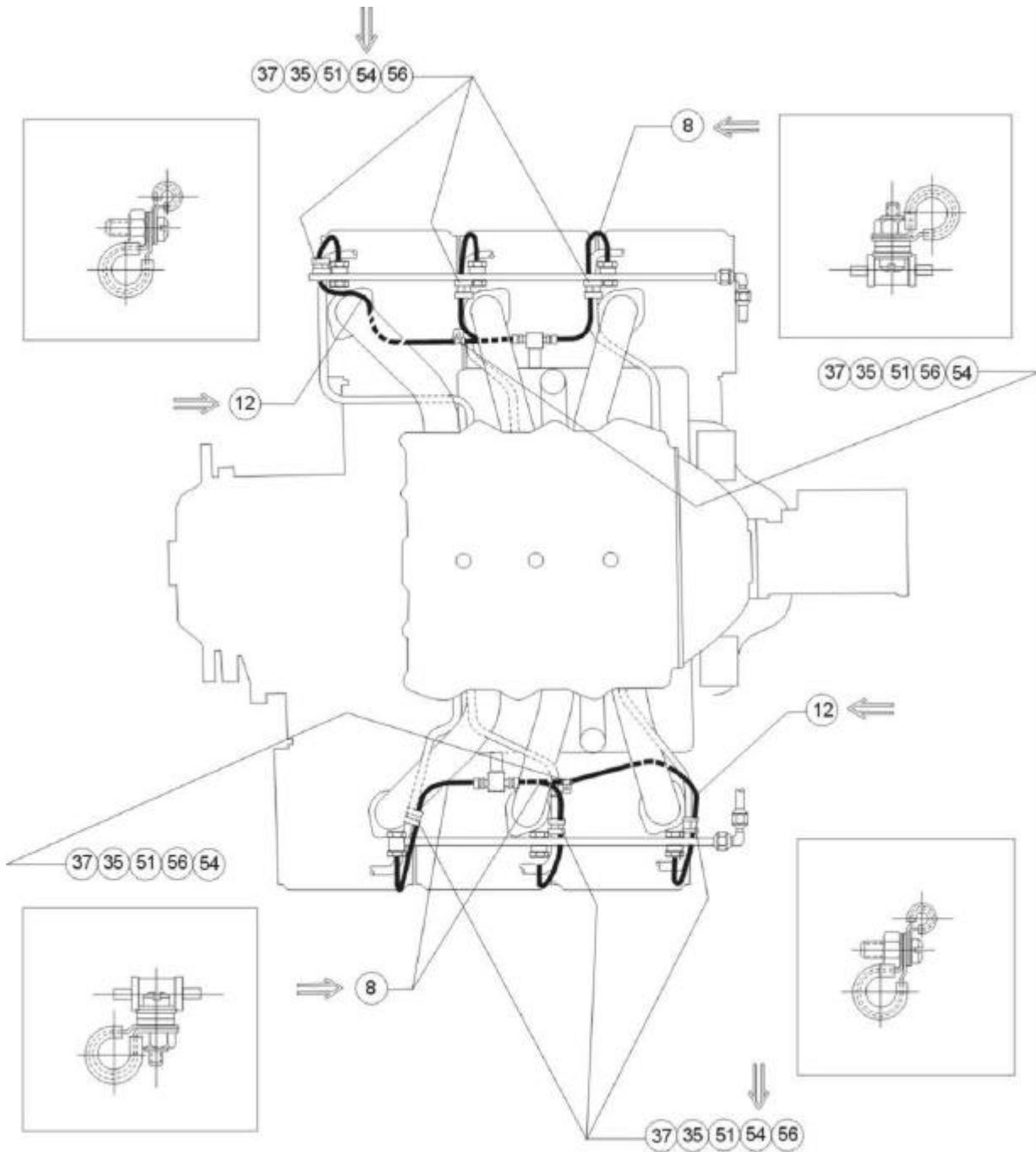


Diagram No. 24A -- IO-540-M1C5

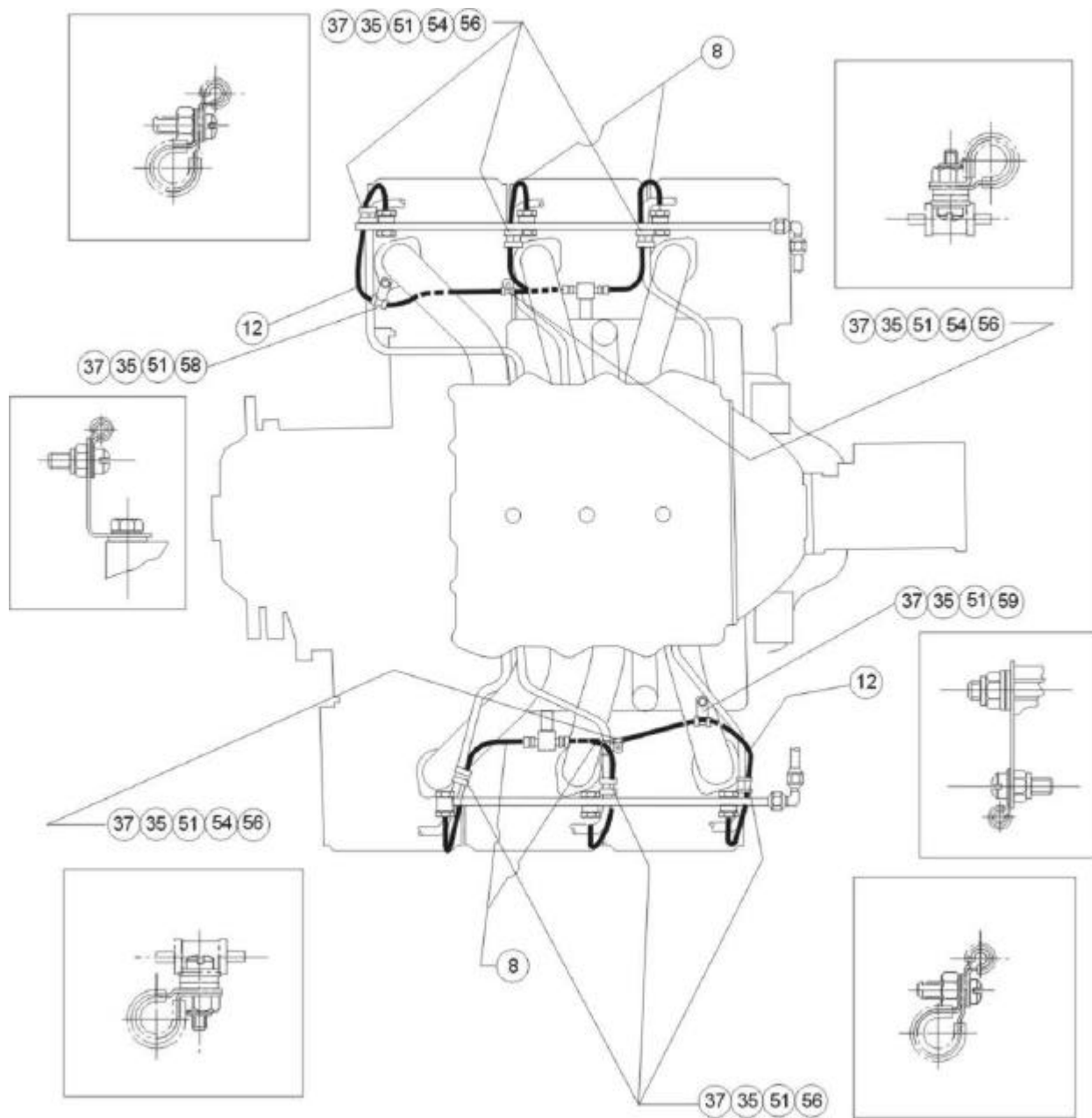


Diagram No. 25 -- TIO-540-S1AD

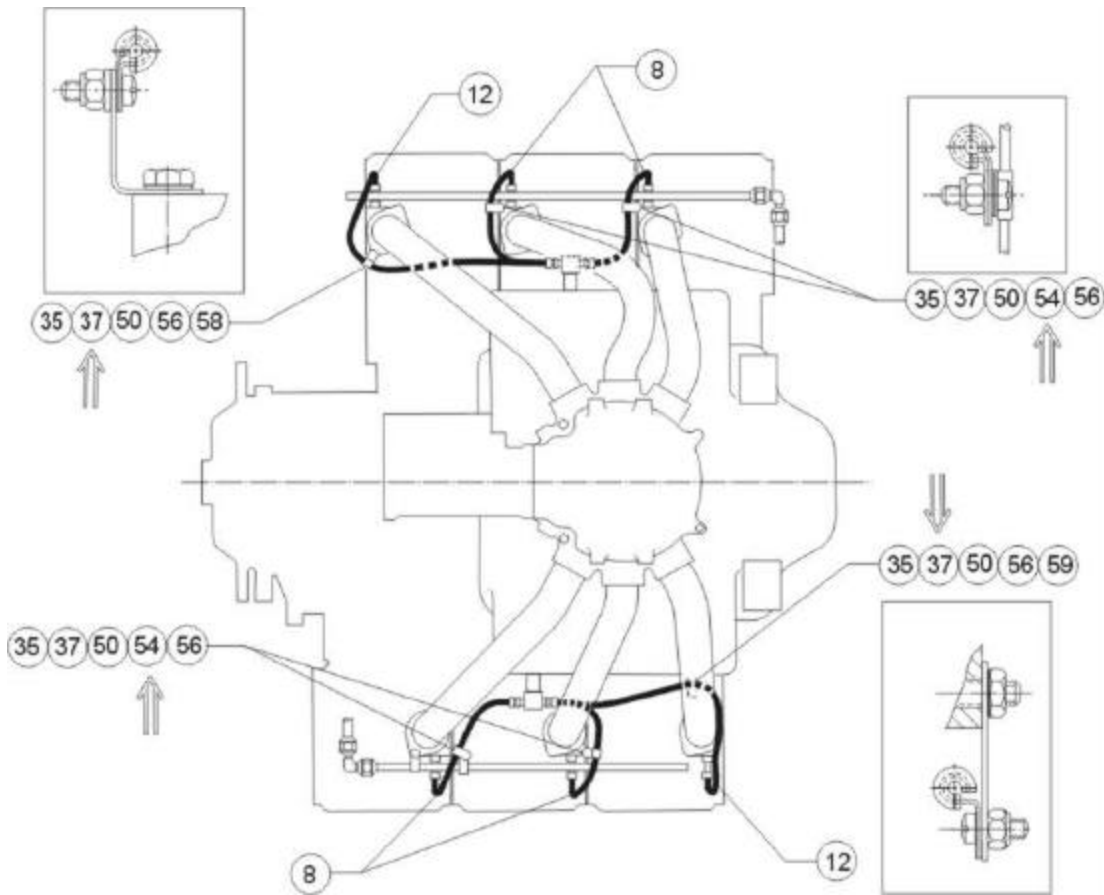


Diagram No. 26 -- TIO-540-V2AD, W2A
LTIO-540-V2AD, W2A

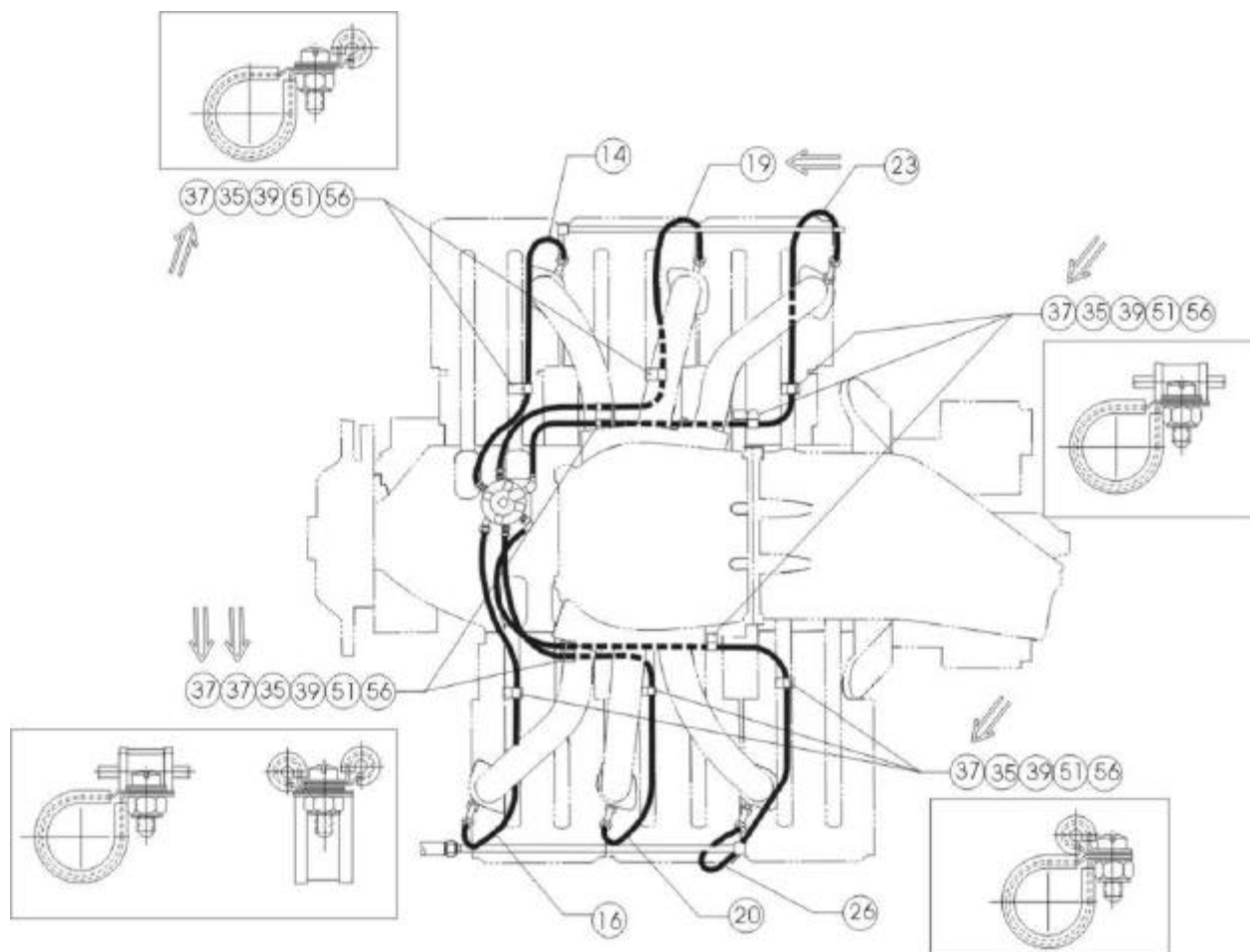


Diagram No. 27 -- IGO-540-B1A, B1C

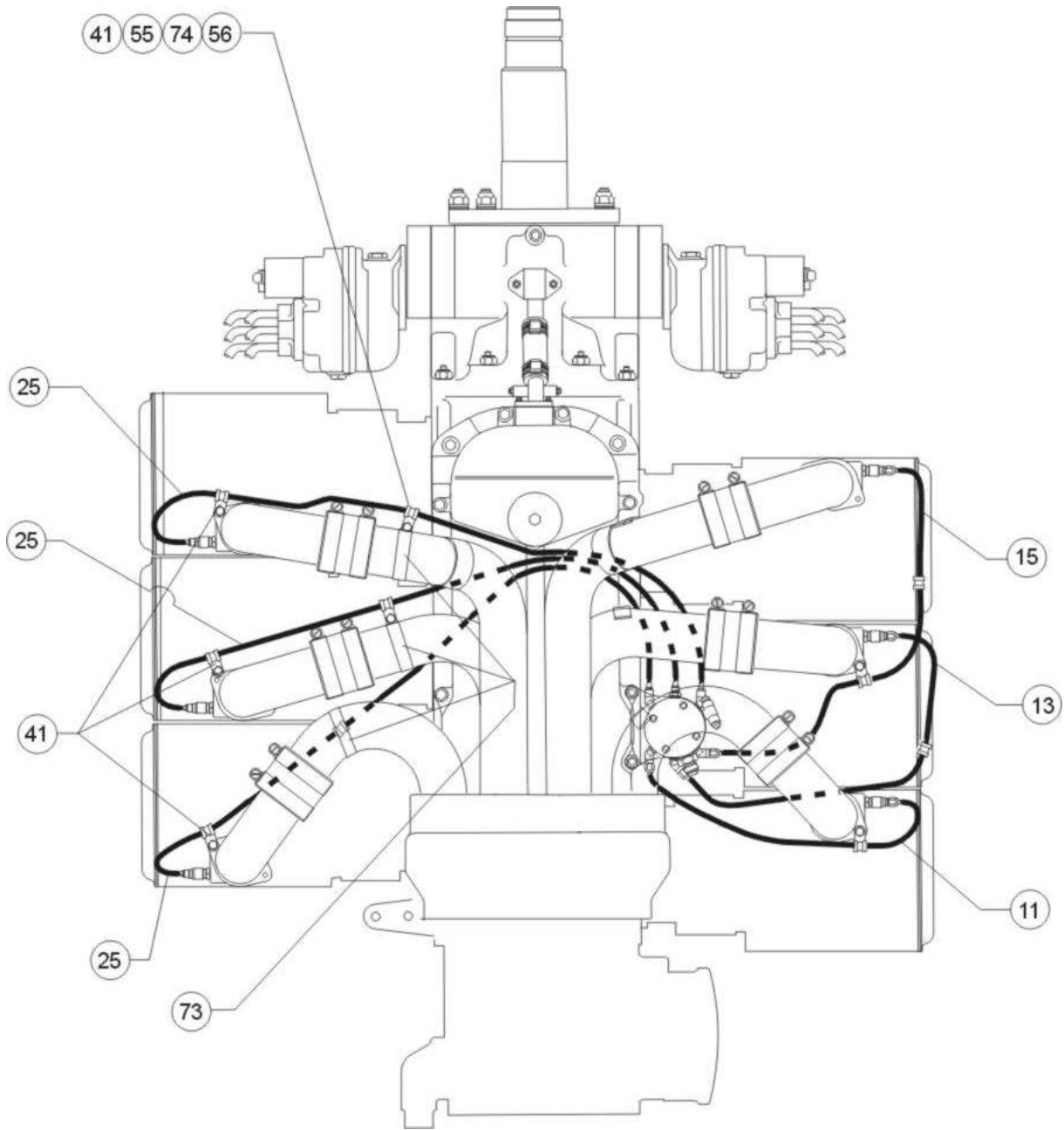


Diagram No. 28 -- IVO-540-A1A

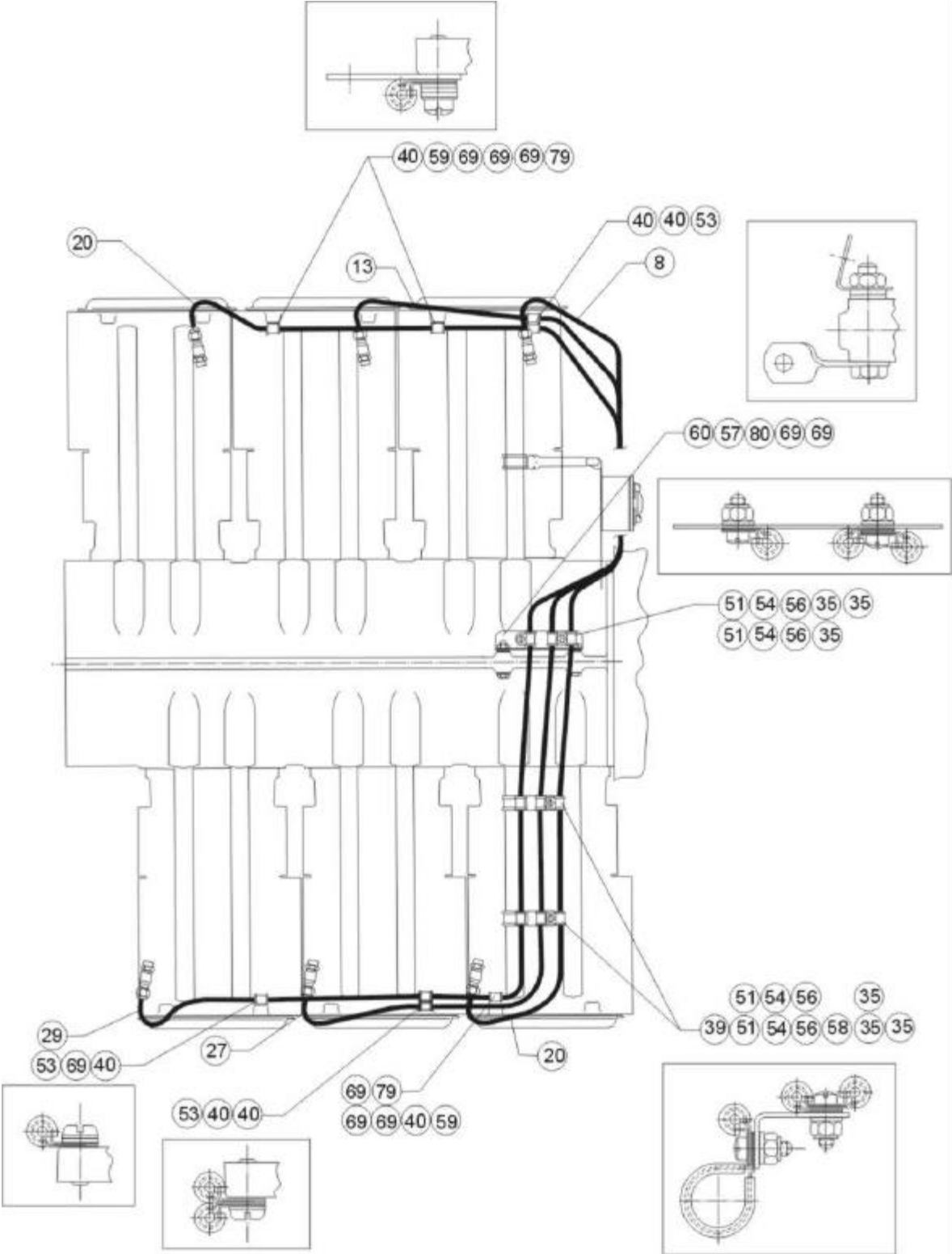


Diagram No. 29 -- TIVO-540-A2A

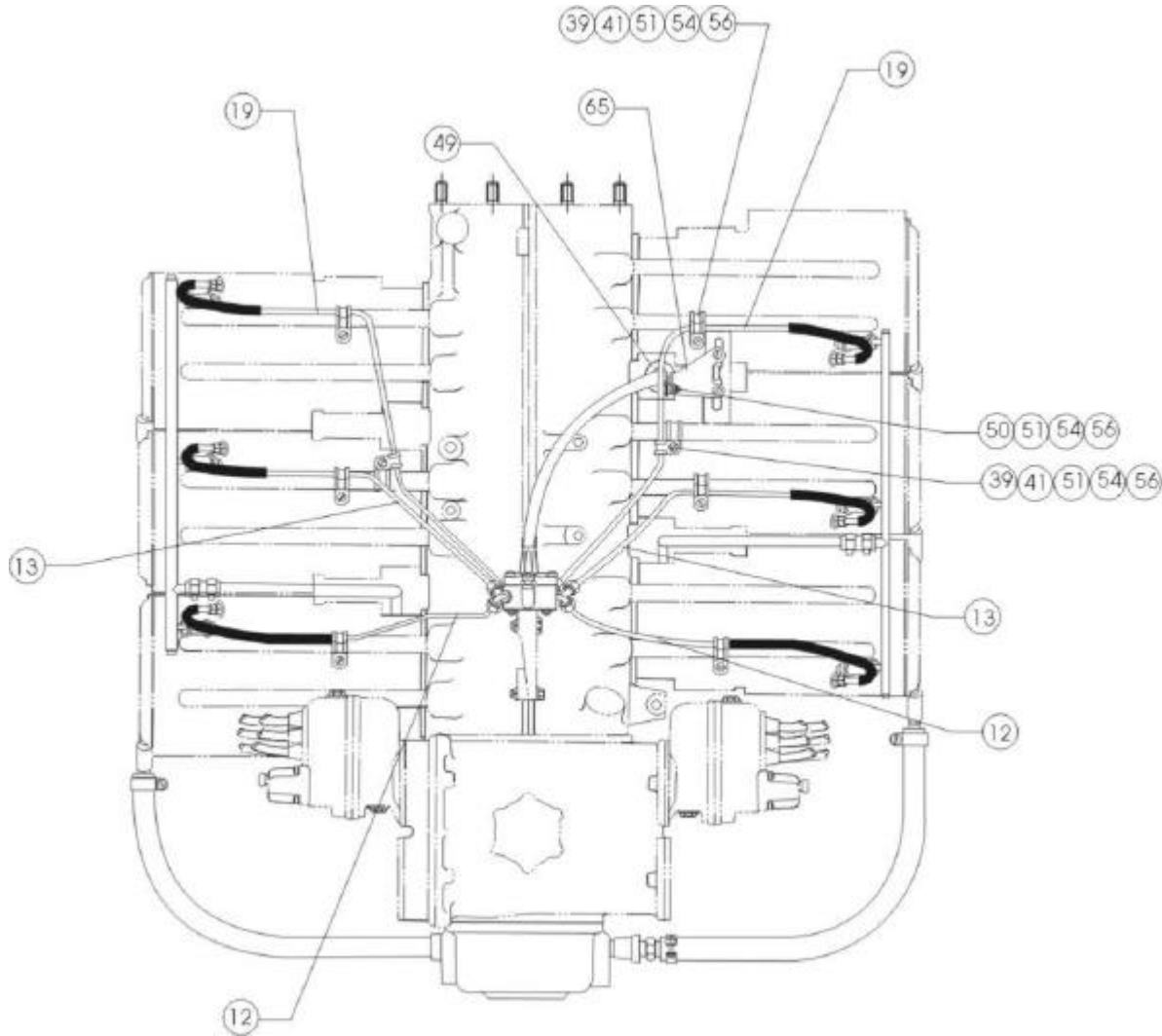


Diagram No. 30 -- IO-720-A1A (View 1 of 2)

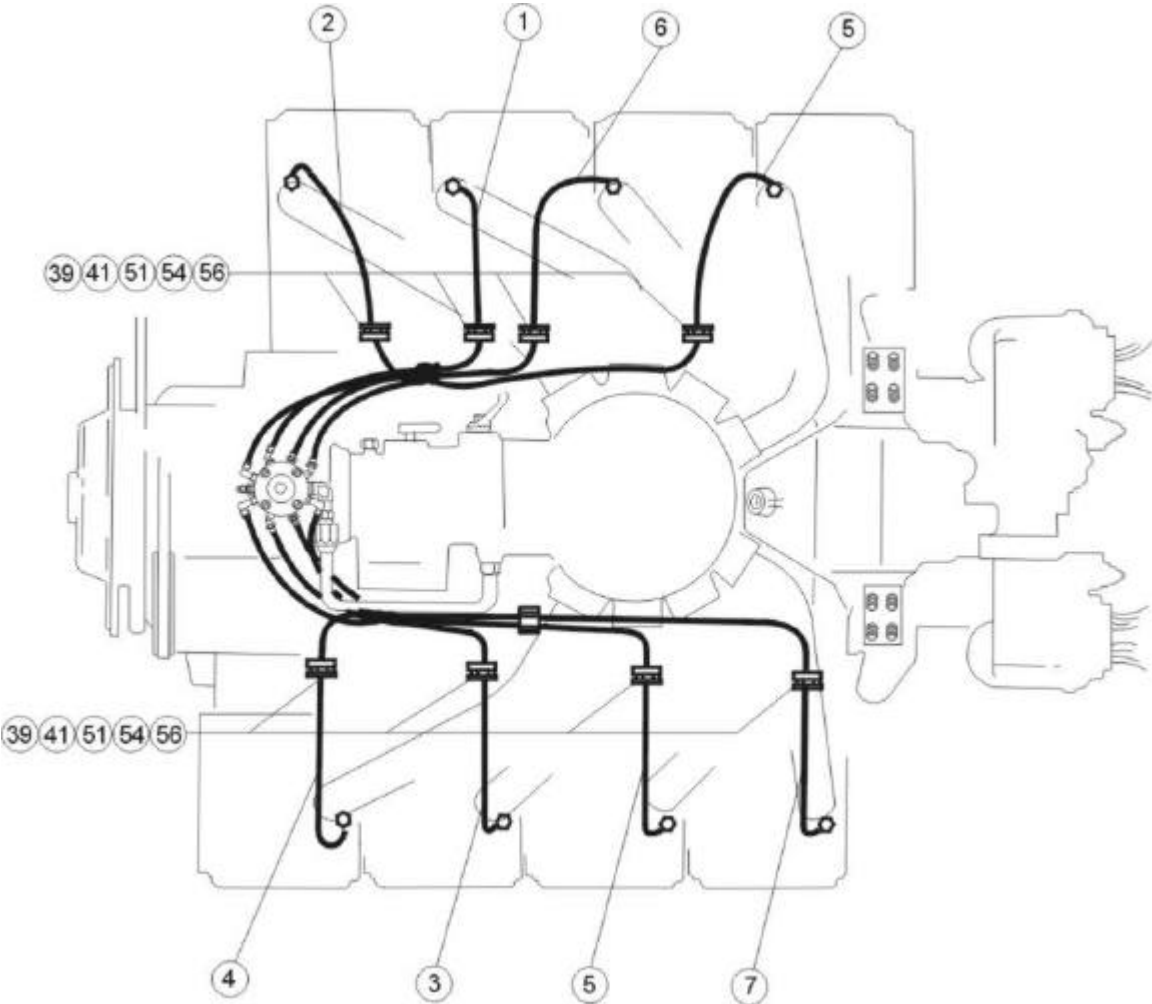


Diagram No. 31 -- IO-720-A1A (View 2 of 2), A1B, D1B, D1BD, D1C, D1CD

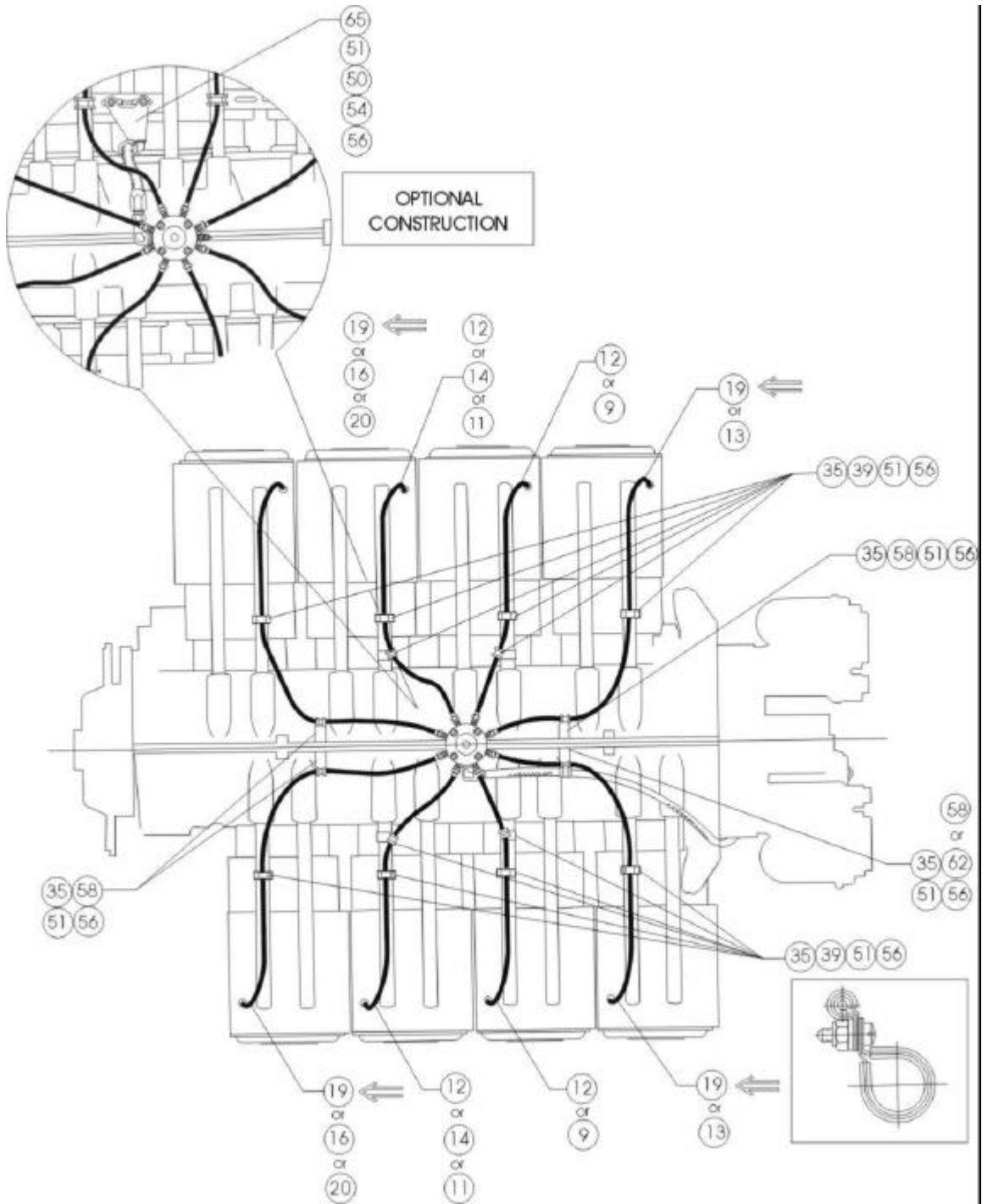


Diagram No. 32 -- IO-720-B1B, B1BD

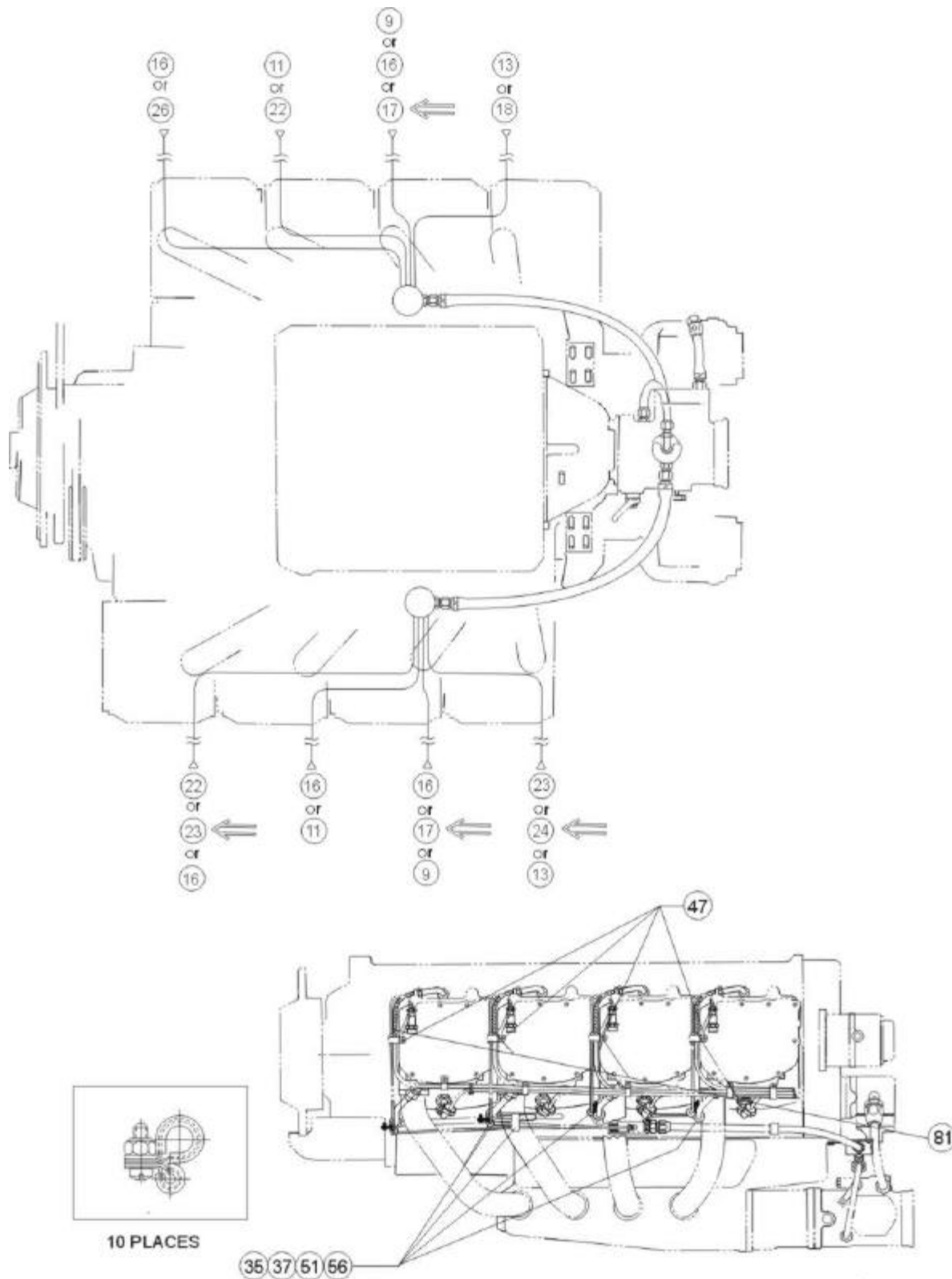


Diagram No. 33 -- IO-720-C1B

