

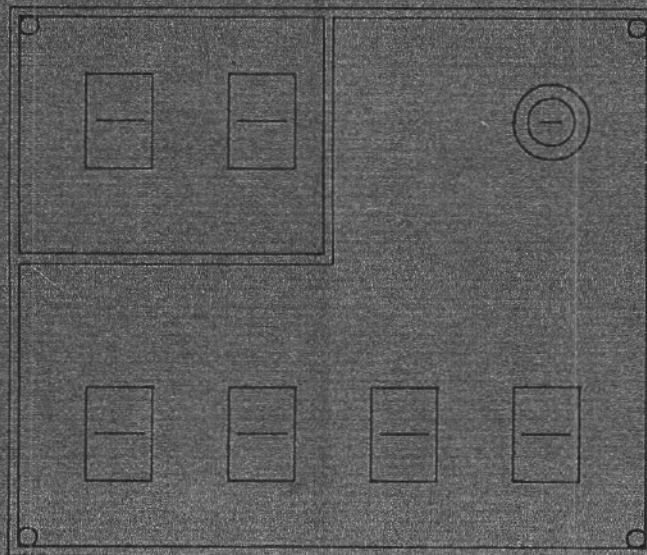
OPERATOR MANUAL

HWH COMPUTERIZED LEVELING SYSTEM

FOR BLUEBIRD MOTOR COACH

FEATURING:

PADDLE SWITCH CONTROLS
HYDRAULIC LEVELING
STATIONARY LEVELING JACKS



HWH CORPORATION
R.R.1
MOSCOW, IOWA 52780
800-321-3494
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ML7106 CH-S MANUAL 10-89

OPERATOR MANUAL
FOR
HWH COMPUTERIZED LEVELING SYSTEM
WITH
PADDLE SWITCH CONTROLS

READ AND UNDERSTAND ENTIRE OPERATORS MANUAL BEFORE OPERATING.

CAUTION! Block frame and tires securely before changing tires or crawling under vehicle.
Do not use leveling jacks or air suspension to support vehicle while under vehicle or changing tires.

VEHICLE MAY DROP OR RAISE AND/OR MOVE FORWARD OR
BACKWARD WITHOUT WARNING CAUSING INJURY OR DEATH.

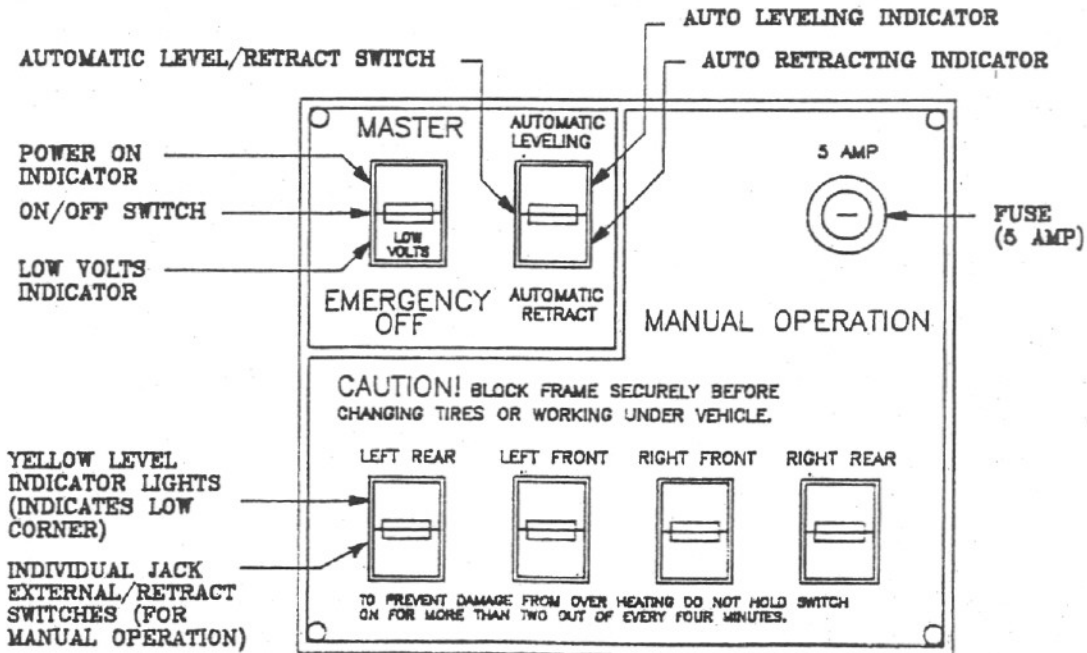
Keep all people clear of vehicle while leveling system is in use.

Lifting wheels off the ground may allow the vehicle to become unstable.

THE VEHICLE MAY MOVE RIGHT, LEFT FORWARD OR
BACKWARDS CAUSING INJURY OR DEATH BY BEING
CRUSHED BY THE VEHICLE.

Never place hands or other parts of body near hydraulic leaks.

OIL MAY CUT AND PENETRATE THE SKIN CAUSING
INJURY OR DEATH.



SYSTEM COMPONENTS

The leveling system consists of:

- 1) A computerized control panel with paddle type switches, indicator lights and fuse.
- 2) A dash mounted warning light.
- 3) Four hydraulic leveling jacks. One on each corner of the coach chassis.
- 4) A solenoid controlled hydraulic valve.
- 5) A 12 volt hydraulic pump and reservoir package.

CONTROL FUNCTIONS

- 1) RED WARNING LIGHT (Dash Mounted)
Anytime one or more jacks are not fully retracted this light should be on. Do not move the vehicle if this light is on.
- 2) ON - OFF SWITCH (On leveling system control panel)
Turn this switch OFF at any time to stop leveling or retracting functions. This switch operates the control power for the system. Turning this switch off will reset the micro processor to the start position. When this switch is turned on the red indicator above the switch should come on indicating there is power to the panel.
- 3) LOW VOLTS INDICATOR (On leveling system control panel)
The red low volts indicator is on the lower portion of the on - off switch. When on it indicates low voltage to the control panel. If the light comes on discontinue use of the system and check the power supply. If in automatic operation the system will automatically stop.
- 4) YELLOW LEVEL INDICATOR LIGHTS (Four on leveling system control panel)
When a yellow light is on it is indicating that corner of the coach is low.
- 5) AUTOMATIC LEVEL AND RETRACT SWITCH
This switch is pushed momentarily to begin the automatic leveling or retracting process. When the switch is pushed toward automatic level; the auto leveling light on the top of the switch will begin flashing, one or two jacks will extend at a time to level the coach, then any remaining jacks will be extended under low pressure until they touch the ground to stabilize the coach, the auto level light will stop flashing, the panel will then shut off. When the switch is pushed toward automatic retract; the auto retract light will start flashing, the jacks will begin retracting, the solenoid valves will be held open for retracting for approximately 7 minutes, the light will stop flashing, the panel will then shut off.
- 6) FOUR INDIVIDUAL JACK SWITCHES
Each of these switches will extend or retract the respective jack. The on - off switch must be on for these switches to be functional.



GENERAL INSTRUCTIONS

Turn the control panel OFF at any time to stop the operation of the system.

NOTE: If the ignition switch is ON the vehicle's air suspension may return the vehicle to travel height.

Any time a hydraulic leveling process is interrupted, retract the jacks according to the "JACK RETRACTION" section and then restart the leveling.

If pump starts when on - off switch is turned on turn off and do not use. Jacks can not be retracted if pump is running, system must be repaired. See "DRAIN VALVE OPERATION" for retracting jacks if they can not be retracted from the control panel.

Do not operate the system when the "LOW VOLTS" light is on or when batteries are low. System components may be damaged and the processor may become erratic. The engine alternator or generator will not provide an adequate power supply for the leveling system.

AUTOMATIC LEVELING PROCEDURE

1. Apply parking brake. Place transmission in recommended parking position.
2. Turn vehicle engine off.
3. If the vehicle is parked on soft ground, blocks may be placed under the jacks for added support.

[READ "AIR SUSPENSION SYSTEM" IN WANDERLODGE OWNERS MANUAL BEFORE CONTINUING]

4. Dump the air from the air suspension system. (Dump tag axle first.)
5. Turn on the leveling system control panel On - Off switch. (If the On - Off was "On" turn "Off" and the "On". This resets the microprocessor to the start position.) The red light on the On - Off switch should be on.
6. Press the automatic level/retract switch toward the "Automatic Leveling Position". The red light on the "Automatic Level" switch will start blinking, the jacks will level the coach, jacks not used for leveling will come down and touch the ground to stabilize the coach, the light will stop flashing and the panel will turn off automatically.

NOTE: During this phase of operation there is a 5 second pause between the operation of each jack. If the vehicle is so far out of level that the leveling jacks cannot level the vehicle even when fully extended one or more of the yellow "Level Indicator" lights will remain lit.

AUTOMATIC RETRACT PROCEDURE

1. Start coach, turn the suspension dump switch to the up position. When front and rear suspension is fully pressurized, put the tag dump switch in the up position. See "Air Suspension System" for complete operation instructions.
2. Turn on-off switch On. (If the On-Off switch was "On" turn "Off" and then "On". This resets the microprocessor to the start position.) Red light on switch should now be on.
3. Press the toggle switch toward the "Automatic Retract" position. The red light on the retract side now begin to blink. The jacks will now begin to retract. When the red warning light on the dash goes out, visually check that all jacks are within 2 inches of being fully retracted. The coach may now be moved however do not turn the panel off. Allow the retract cycle to time out (approximately 7 minutes). The panel will then turn off automatically.

MANUAL OPERATION

1. Set parking brake, place transmission in recommended position for parking, turn engine off.
2. Turn leveling system control panel on.
[READ "AIR SUSPENSION SYSTEM" SECTION IN WANDERLODGE OWNERS MANUAL BEFORE CONTINUING]
3. Dump suspension air at this time. (Dump tag axle first.)
4. Jacks may now be extended (or retracted) as desired by pushing the respective lower switch toward extend (or retract). Do not continue to hold the switch after the jack has extended full stroke. Extend jacks as needed to put out the yellow indicator lights. Extend any remaining jacks until they touch the ground to stabilize the coach. Note: More than one jack may be operated at once. Improved leveling response may often be achieved by operating the two front or the two side jacks together.
5. Before retracting the jacks start the coach engine, turn the suspension pump switch to the up position. When the front and rear suspension is fully pressurized, put the tag dump switch in the up position. Jacks may now be retracted by manually holding the four switches toward retract or by using the automatic retract function.
6. Turn leveling panel off when not in use.

DRAIN VALVE OPERATION

1. Use the drain valve for retracting the jacks only if the "Retract" or "Store" function on the control panel or the individual jack switches will not retract the jacks for travel.

CAUTION: KEEP AWAY FROM WHEELS, DO NOT CRAWL UNDER COACH, KEEP A SAFE DISTANCE IN FRONT AND REAR OF VEHICLE. THE VEHICLE MAY DROP AND/OR MOVE FORWARD OR BACKWARD WITHOUT WARNING OR AS THE DRAIN VALVE IS OPERATED. OIL MAY SQUIRT OUT OF THE DRAIN VALVE WHEN FIRST OPENED,

2. Locate the drain valve. Usually under the right front corner of the coach. The drain valve is 3/4 X 2" X 5" and has four "T" pit cock type handles.
3. Place a container under the drain valve to catch the oil. Allow clearance for coach to lower. (Do not reuse oil.)
4. Open the two outer valves slowly (two turns counter clockwise) to bleed the main cylinders on the two rear jacks.
5. Open the two center valves slowly (two turns counter clockwise) to bleed the main cylinders on the two front jacks.
6. Check that all four jacks are now fully retracted.
7. Close the four drain valves.
8. The leveling system must now be repaired and refilled with oil before leveling system can be used again.

11/29/89

SERVICING OF LEVELING SYSTEM

HYDRAULIC OIL

Retract the four leveling jacks before checking oil level. Locate the hydraulic power unit. Clean any dirt away from the breather/filler cap in the oil reservoir. Check that the oil is within (1) inch of the top of the reservoir.

The oil should be checked when the vehicle is first purchased and then once every two years. More often if there is an oil leak in the system.

Use Dexron II transmission fluid in hydraulic reservoir. Fill to within 1" of overflowing.

Never use brake fluid or hydraulic jack fluid.

VISUAL INSPECTION

Periodically inspect the leveling jacks for damaged or missing parts such as pivot bolts, springs, roller bearings or stops. Check the hydraulic lines and wiring for damage or wear. Check that the jacks do not interfere with any part of the vehicle when they are in the horizontal position.

OPERATIONAL CHECK

Review operator manual and confirm that system is operating correctly. Check warning switch operation by extending one jack approximately 4", check that the warning light on the dash came on, retract the jack, then repeat for other three jacks.

NOTE: If any of the above checks or inspections reveal a problem or if there are other problems or questions consult a qualified RV repair center, your vehicle or coach manufacturer, or HWH Corporation for service or repair.

HWH COMPUTERIZED CONTROL PANEL WITH PADDLE SWITCHES

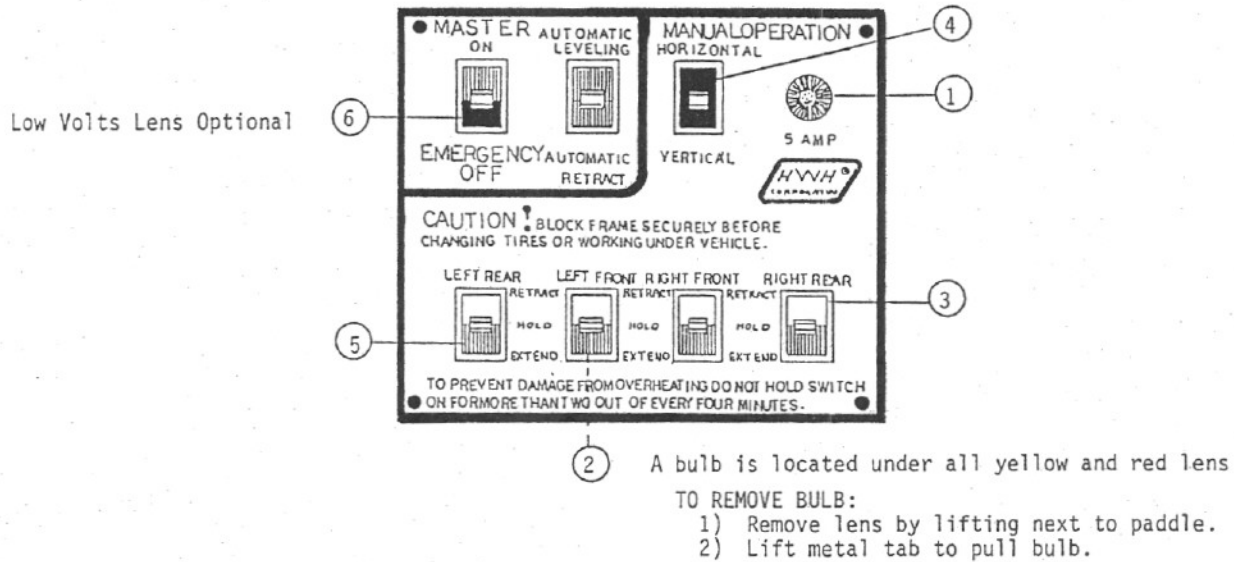
The face of these panels are 6.75 X 5.75 inches and usually have seven (sometimes 5) paddle switches with red, yellow or black lens. A printed circuit board is permanently attached to the back of the switches.

Immediately below is a listing of all replacement components.

Following the replacement components is a listings of replacement panels and existing panels. The panels are first catagorized by features distinguishable from the face of the panel and then listed by operational diferences.

The following Computerized Panels are used with the Solenoid Manifold Assemblies found on Parts Manual page "MLP 350" except the BiAxis Panels are used with the BiAxis Solenoid Manifold Assemblies on Parts Manual page "MLP ".

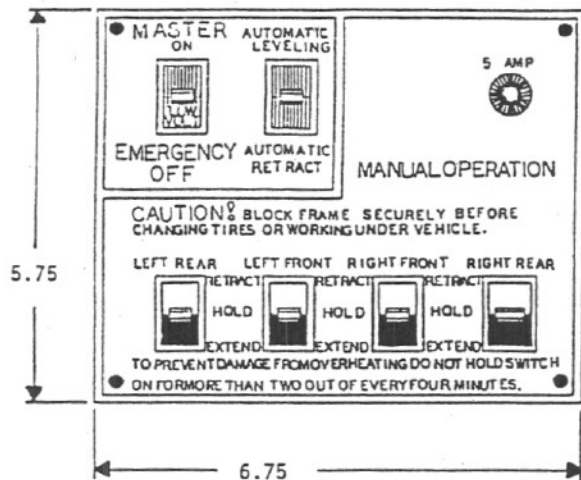
REPLACEMENT COMPONENTS FOR COMPUTERIZED PANELS



ITEM	PART NO.	DESCRIPTION
1	R3674	FUSE AGC 5 (5 FUSES PER R3674)
2	RP3654	BULB #73 (2 BULBS PER RP3654)
3	RP3655	LENS YELLOW (2 LENS PER RP3655)
4	RP3656	LENS BLACK (2 LENS PER RP3656)
5	RP3657	LENS RED (2 LENS PER RP3657)
6	RP4946	LENS RED LOW VOLTS (1 LENS PER RP4946)

PARTS MANUAL
COMPUTERIZED PANELS CONTINUED

BLACK FACE PANELS
(USED PRIMARILY ON BLUE BIRD COACHES)



DISTINGUISHING FEATURES:

- 1) Color: black with gray lettering.
- 2) The absence of the horizontal/vertical switch.
- 3) The presence of the master switch and auto level/retract switch on face rather than on a separate panel in the dash.
- 4) The 4 lower switches, 4 yellow lights and 4 black lens are for left rear, left front, right front and right rear. (Compare to feature 3 of the Bi-Axis panel.)

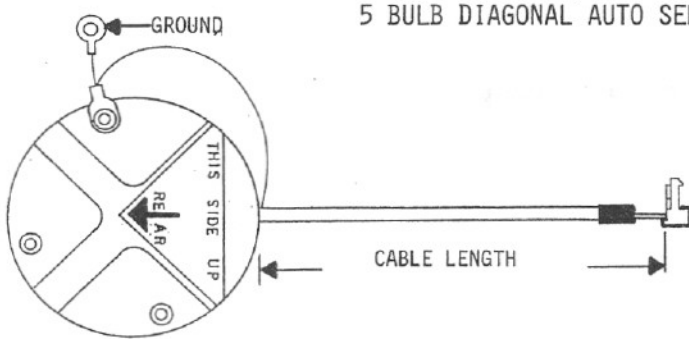
REPLACEMENT: BROWN FACE PANELS WITH CROSS REFERENCE

PART NO. FOR ORDERING	*EXISTING PART NO. (SEE WHITE TAG ON BACK)	SUSPENSION AIR DUMP	OPERATIONAL FEATURES	**SENSING UNIT REQD. SEE PAGE MLP2.12	*PART NO. ON BACK OF REPLACEMENT PANEL WILL BE:
RAP6989	AP6989 _ _ _	NO (MUST BE DUMPED MANUALLY)	FOR USE WITH FIXED PIVOT JACKS ONLY	4 BULB DIAGONAL	AP6989 _ _ _

* "PART NO" is on back of panel on white tag. All panel numbers begin with "AP" followed by four numerals. The four numerals are followed by A, -1, A-1, or A-2 etc. denoting minor variations in the panel.

** See sensing unit section in Parts Manual for part numbers and explanation of types.

SENSING UNITS FOR COMPUTERIZED PANEL LEVELING SYSTEMS



5 BULB DIAGONAL AUTO SENSING UNIT

USE WITH:

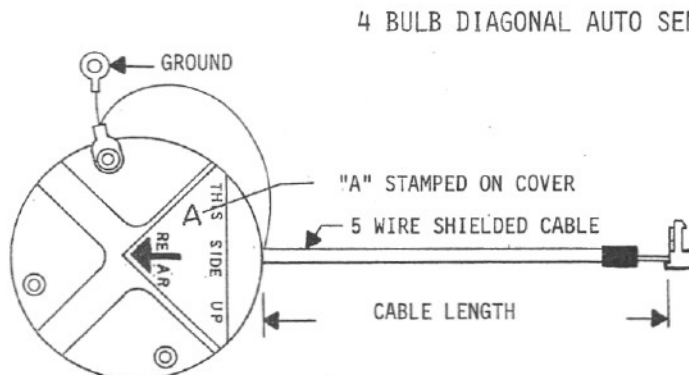
- 1) See COMPUTERIZED CONTROL PANEL section of PARTS MANUAL for selection of sensing units

DISTINGUISHING FEATURES:

- 1) Cable is attached to front of sensing unit
- 2) Orange or yellow five pin MTA connector

FOR REPLACEMENT

Use 4 bulb diagonal sensing unit below. 4 or 5 bulb sensing units may be used with some panels. Other panels require 4 bulb units.



4 BULB DIAGONAL AUTO SENSING UNIT

USE WITH:

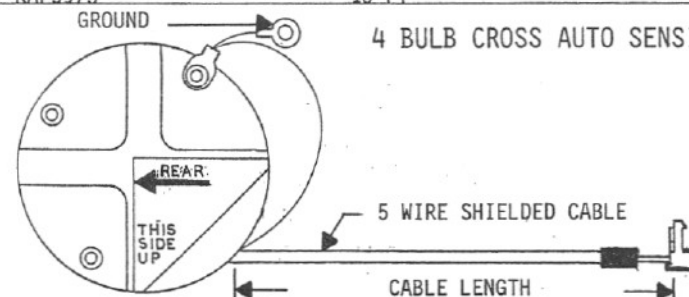
- 1) See COMPUTERIZED CONTROL PANEL section of PARTS MANUAL for selection of sensing unit

DISTINGUISHING FEATURES:

- 1) Cable is attached to front of sensing unit
- 2) Orange or yellow five pin MTA connector
- 3) "A" stamped on cover

REPLACEMENT SENSING UNITS

PART NO.	CABLE LENGTH	DESCRIPTION
RAP4720	13 FT	SENSING UNIT AU/13/4 BULB
RAP4791	21 FT	SENSING UNIT AU/21/4 BULB
RAP4724	30 FT	SENSING UNIT AU/30/4 BULB
RAP6058	27 FT	SENSING UNIT AU/27/4 BULB W/4 FT GROUND
RAP4834	45 FT	SENSING UNIT AU/45/4 BULB
RAP5973	16 FT	SENSING UNIT AU/16/4 BULB



4 BULB CROSS AUTO SENSING UNIT

USE WITH:

- 1) See COMPUTERIZED CONTROL PANEL section of PARTS MANUAL for selection of sensing unit
- 2) Some paddle switch and some touch panel computerized systems.

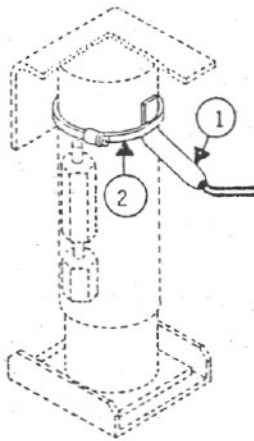
DISTINGUISHING FEATURES:

- 1) Cable is attached to right front side of sensing unit
- 2) Orange or yellow five pin MTA connector

REPLACEMENT SENSING UNITS

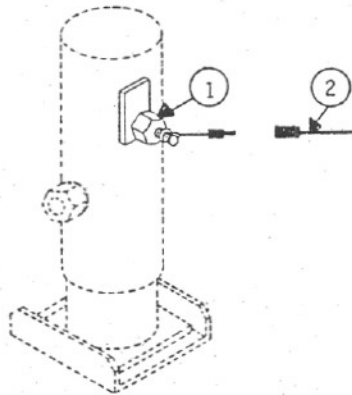
PART NO.	CABLE LENGTH	DESCRIPTION
RAP5151	13 FT	SENSING UNIT AU/13/BI AX
RAP5394	21 FT	SENSING UNIT AU/21/BI AX
RAP5730	40 FT	SENSING UNIT AU/40/BI AX

FOR KICK-DOWN JACKS



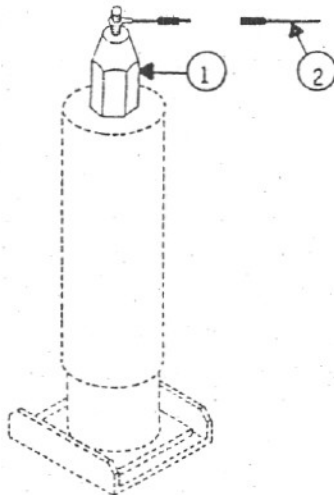
ITEM	PART NO.	DESCRIPTION
1	RAP3309	SWITCH WARNING SHORT 10" LONG LEADS. USED ON AP3289 SHORT STD., AP3342 TALL STD., AP3706 SHORT AUTO., AP3664 TALL AUTO JACKS.
1	RAP2477	SWITCH WARNING LONG 36" LONG LEADS. USED ON AP2381 LARGE STD., AP3677 LARGE AUTO AND AP1206 MECHANICAL KICK DOWN JACKS.
2	RP2508	CLAMP BAND H40 SMALL FOR JACKS WITH 2 5/8 DIA. CYLINDER BARRELS USED ON AP3289 SHORT STD., AP3342 TALL STD. AP3706 SHORT AUTO, AP3664 TALL AUTO., AND AP1206 MECHANICAL KICK DOWN JACKS.
2	RP2711	CLAMP BAND H52 LARGE FOR JACKS WITH 3 1/2" DIA CYLINDER BARRELS USED ON AP2381 LARGD STD. AND AP3677 LARGE AUTO JACKS.

FOR NON KICK-DOWN JACKS



ITEM	PART NO.	DESCRIPTION
1	RAP5027	SWITCH WARNING SIDE PORT SWITCH MOUNTED IN PORT ON SIDE OF BARREL. USED ON AP5436 AND AP4790 JACKS ON BLUE BIRD COACHES. USED ON AP4154, AP3898 and AP3897 JACKS ON 1985 EII COACHES.
2	RAP4756	PIGTAIL W/PACKARD SHROUD (MATES TO PLUG ON WARNING SWITCH 8" LG.)

FOR NON KICK-DOWN JACKS



ITEM	PART NO.	DESCRIPTION
1	RAP4707	SWITCH WARNING 2" TRAVEL USED ON AP5572 AND AP3116 REAR JACKS ON BLUE BIRD PUSHER COACHES.
2	RAP4756	PIGTAIL W/PACKARD SHROUD (MATES TO PLUG ON WARNING SWITCH 8" LG.)

WARRING SWITCHES
PARTS MANUAL

FOR TICK-DOWN JACKS

ITEM	PART NO.	DESCRIPTION
1	847000	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.
1	847001	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.
1	847002	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.
1	847003	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.



FOR TICK-DOWN JACKS

ITEM	PART NO.	DESCRIPTION
1	847004	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.
1	847005	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.

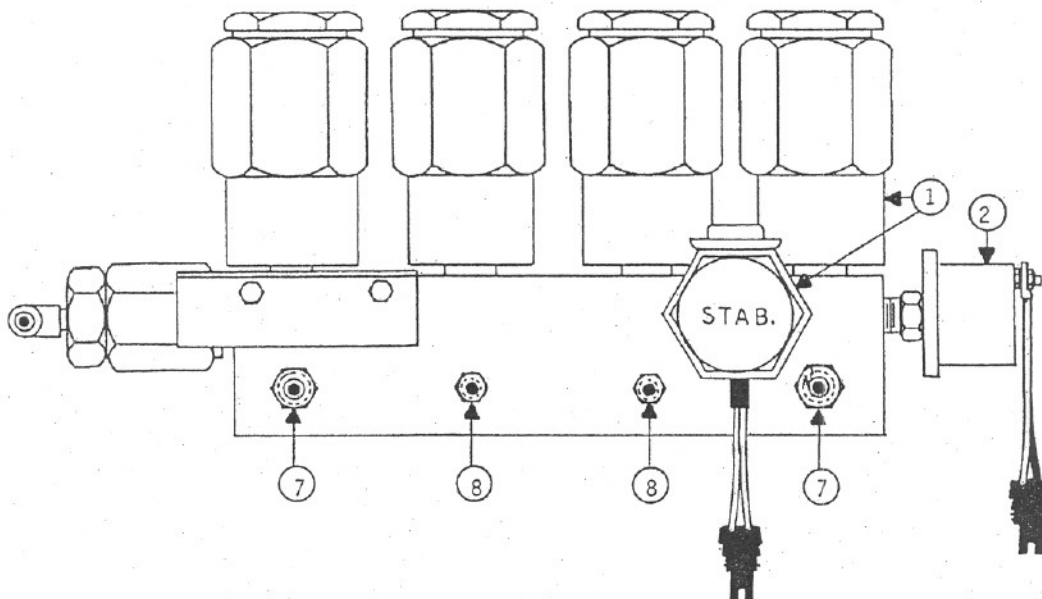
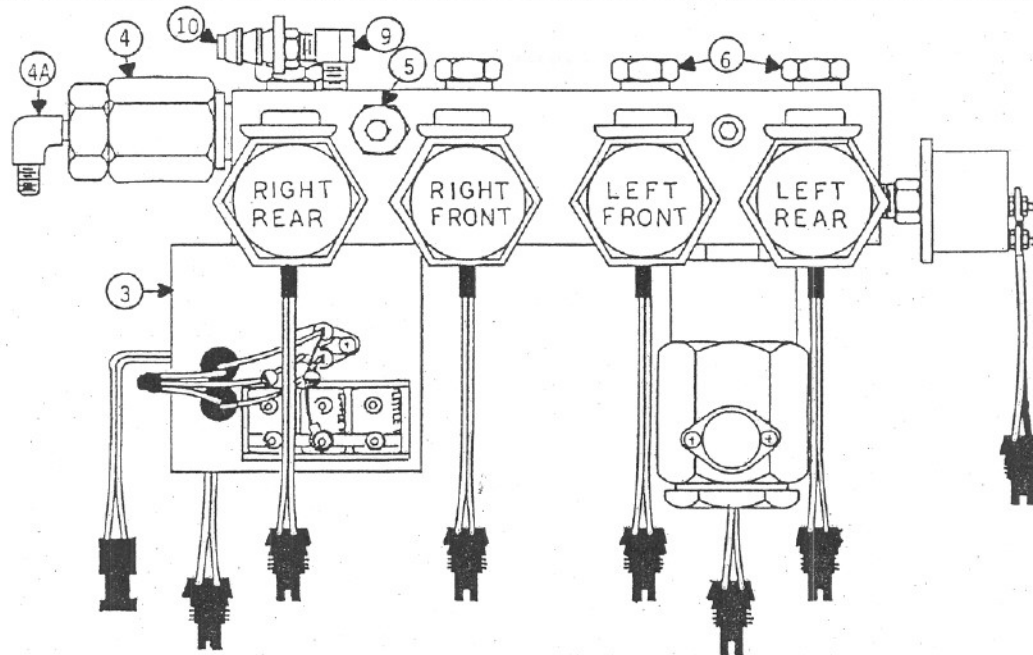


FOR TICK-DOWN JACKS

ITEM	PART NO.	DESCRIPTION
1	847006	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.
1	847007	SWITCH WARRING TICK FOR TICK-DOWN JACKS. USED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS. MOUNTED ON WARRING TICK-DOWN JACKS.



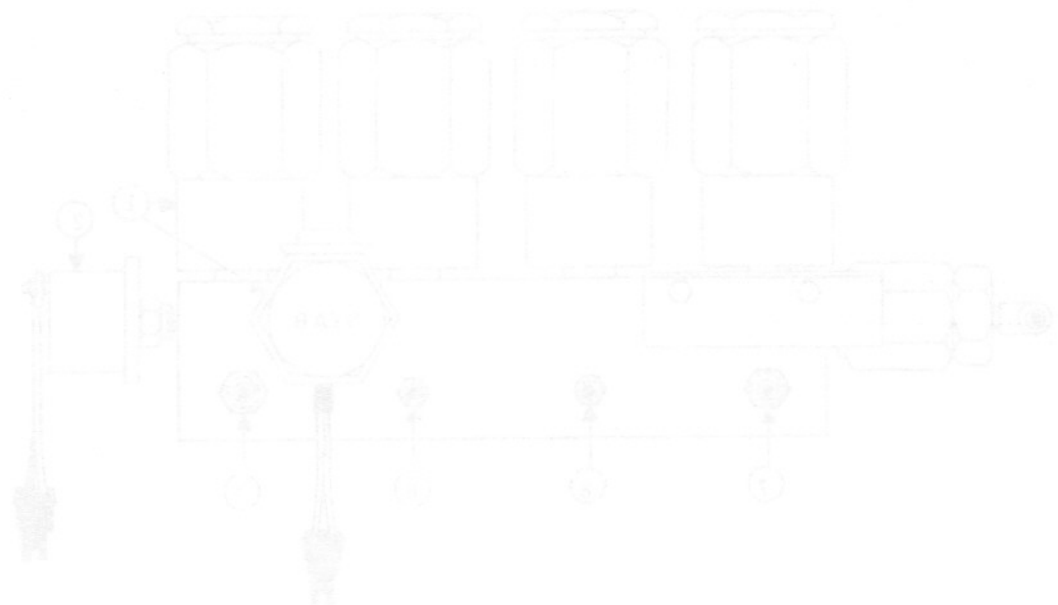
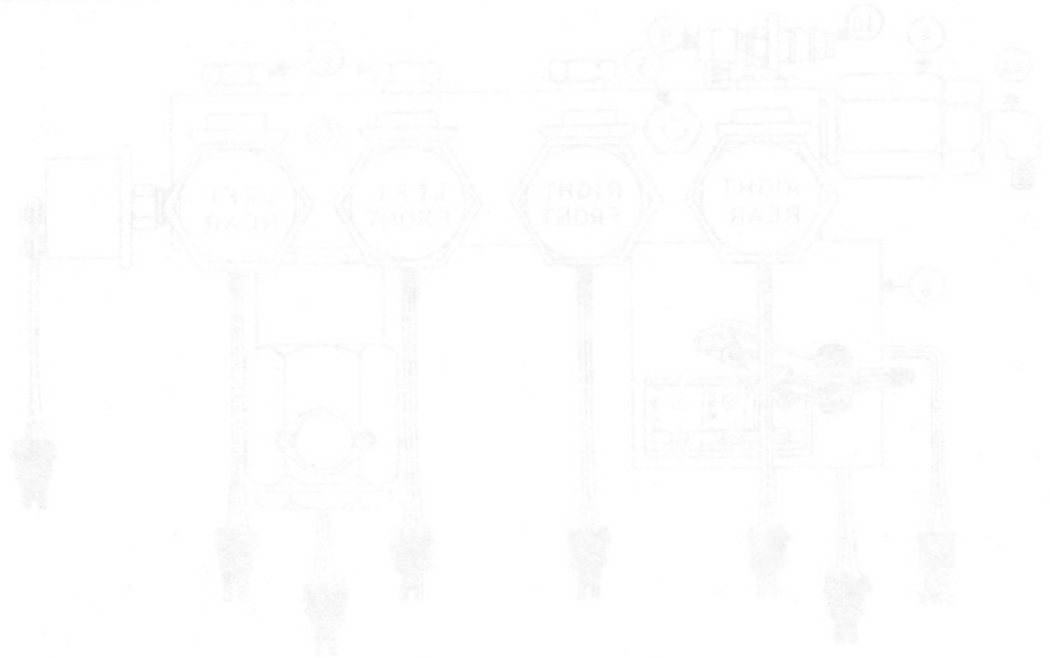
SOLENOID MANIFOLD ASSEMBLY FOR COMPUTERIZED LEVELING SYSTEMS
FOR BLUE BIRD COACHES WITH OUT HORIZONTAL/VERTICAL SWINGING JACKS



SOLENOID MANIFOLD REPAIR PARTS

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
	RAP5553		SOLENOID MANIFOLD (COMPLETE ASSY. WITH 3000 PSI SWITCH AND 3 CIRCUIT BREAKER BOARD)	6	RAP3628	4	CHECK VALVE CARTRIDGE (1 CARTRIDGE PER RAP3628)
1	RAP3572	5	SOLENOID VALVE W/2 WIRE (1 SOLENOID PER RAP3572)	7	RF3475	2	5-4-FTX-S MALE CONNECTOR (1/4 NPT x 1/2 - 20 FOR 5/16 LINE)
2	RAP4152	1	PRESSURE SWITCH 3000 PSI	8	RF1477	2	4-4-FTX-S MALE CONNECTOR (1/4 NPT x 7/16 - 20 FOR 1/4 LINE)
3	RAP5117		BOARD 3 CIRCUIT BREAKER				(1 FITTING PER RF1477)
4	RAP3623	1	PRESSURE/RETURN SHUTTLE VALVE	9	RF3340	1	2202 P-4-4 ELBOW (BRASS) (1/4 NPT MALE x 1/4 NPT FEMALE)
4A		1	4-CTX-S 90° MALE ELBOW	10	RF4385	1	PUSH LOC 3/8 NPT 1/2 HOSE (3/8 NPT x 1/2 ID HOSE)
4A	RF1453	1	4-CTX-S 90° MALE ELBOW (1/8 NPT x 7/16 - 20 FOR 1/4 LINE)				
5	RAP3627	1	RELIEF VALVE CARTRIDGE				

COLONIS MANIFOLD ASSEMBLY FOR COMPUTERIZED LEVELING SYSTEMS
 FOR SOME BIRD COACHES WITH OUT HORIZONTAL/VERTICAL SWINGING JACKS

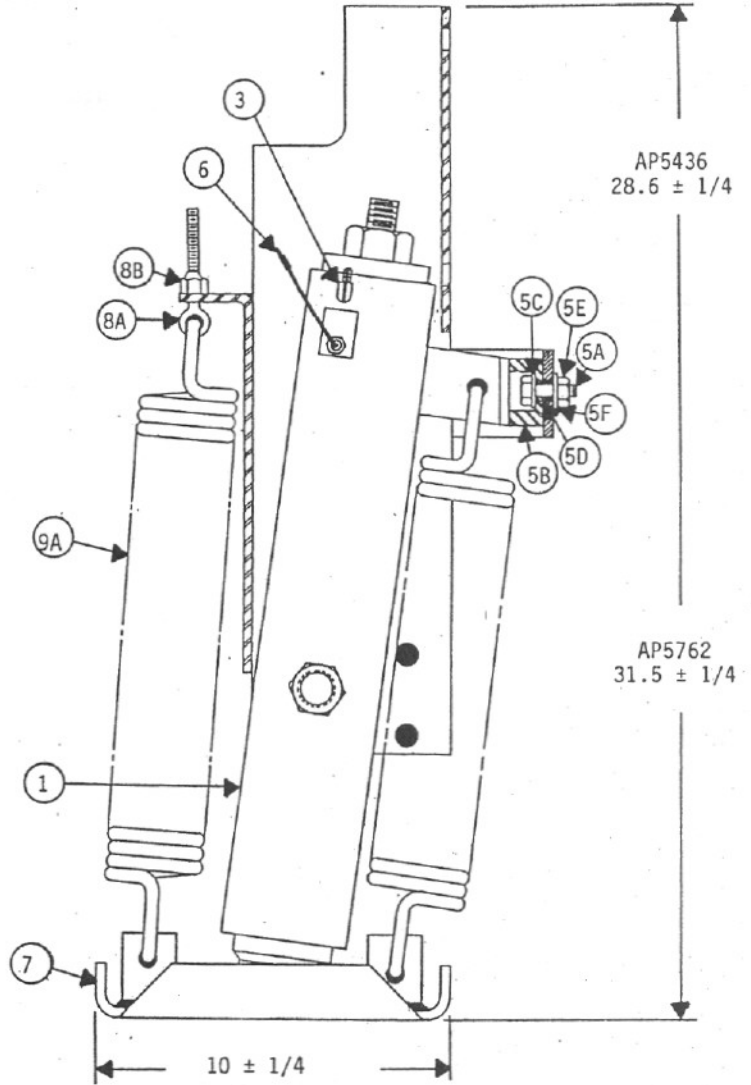
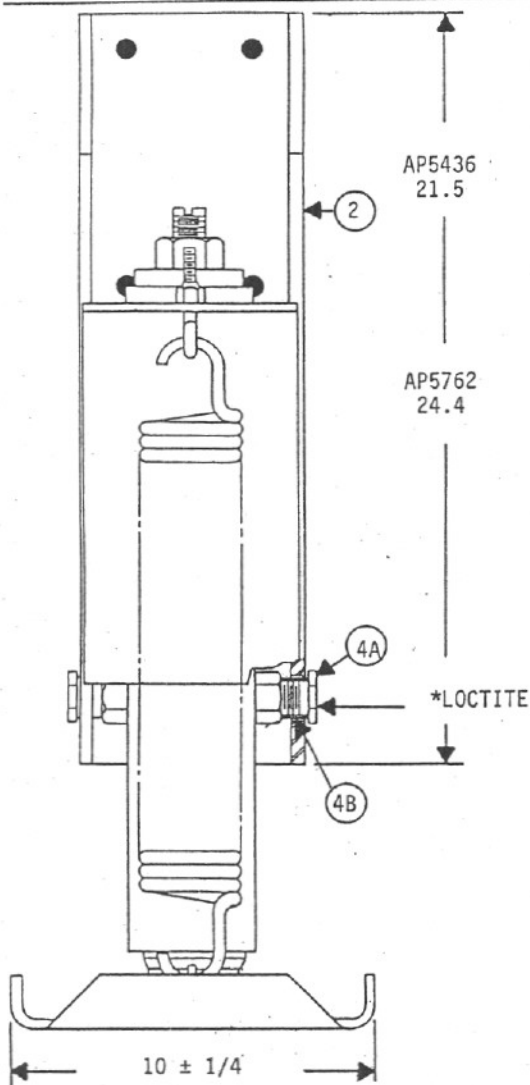


COLONIS MANIFOLD REPAIR PARTS

ITEM	PART NO.	QTY	DESCRIPTION
1	RA2855	1	RESERVE VALVE CARTRIDGE
2	RA2857	1	LINE
3	RA2858	1	LINE
4	RA2859	1	LINE
5	RA2860	1	LINE
6	RA2861	1	LINE
7	RA2862	1	LINE
8	RA2863	1	LINE
9	RA2864	1	LINE
10	RA2865	1	LINE
11	RA2866	1	LINE
12	RA2867	1	LINE
13	RA2868	1	LINE
14	RA2869	1	LINE
15	RA2870	1	LINE
16	RA2871	1	LINE
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92	RA2947	1	LINE
93	RA2948	1	LINE
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95	RA2950	1	LINE
96	RA2951	1	LINE
97	RA2952	1	LINE
98	RA2953	1	LINE
99	RA2954	1	LINE
100	RA2955	1	LINE

AP5436 JACK 2.75 X 13" STROKE 7° 16000 LB

AP5762 JACK 2.75 X 13 STROKE 7° 16000 LB TALL BRKT



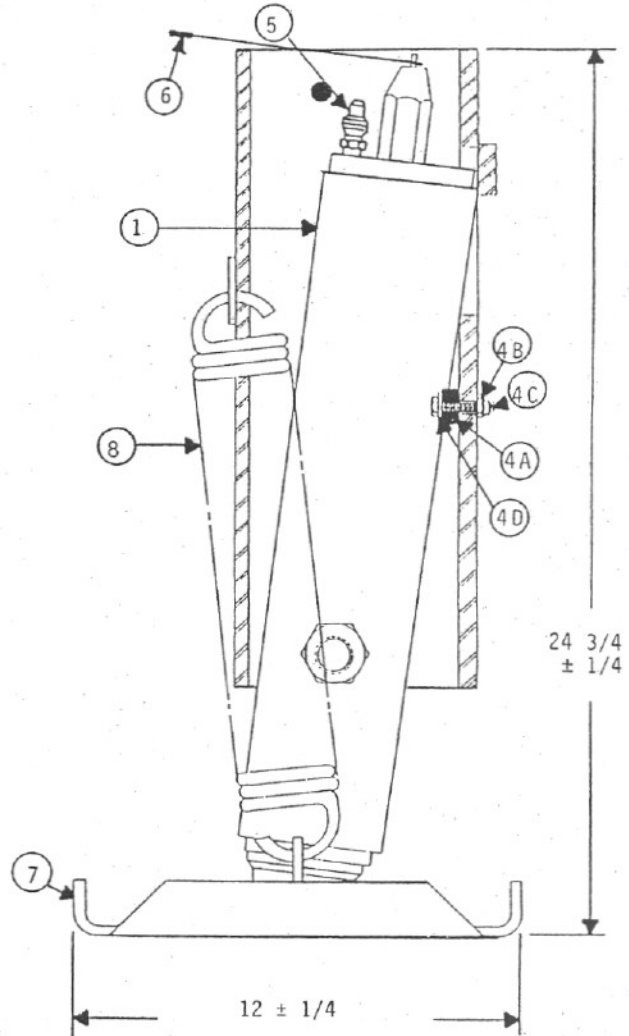
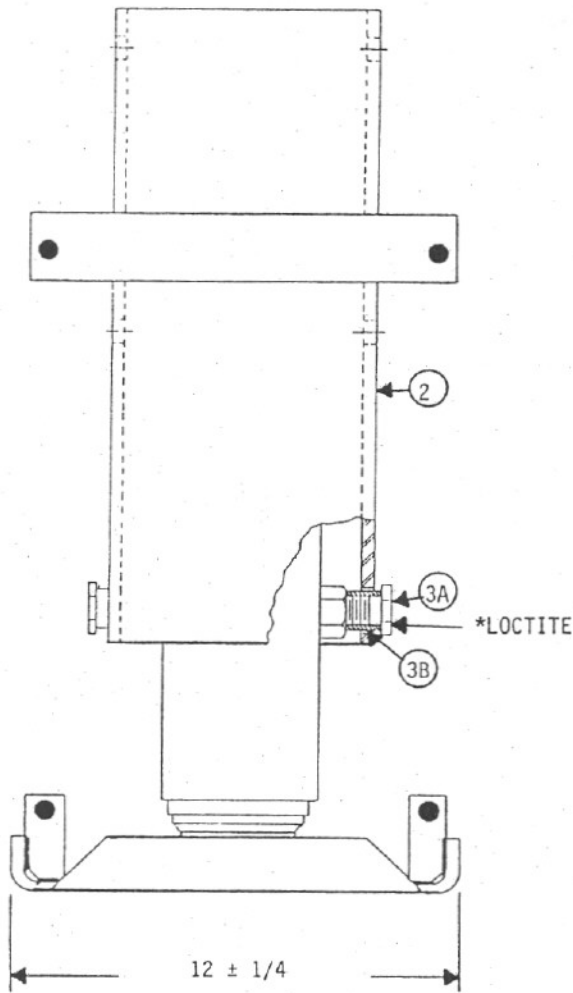
ITEM	PART NO.	QTY.	DESCRIPTION
	RAP5436		JACK 2.75 X 13" 16 S (COMPLETE ASSY.)
	RAP5762		JACK 2.75 X 13" 16 S TALL BRKT (COMPLETE ASSY.)
1	RAP5452	1	CYL ASSY 2.75 x 13" (SAME FOR BOTH JACK ASSY'S) (INCLUDES ITEMS 3 AND 6)
2	RAP5454	1	PIVOT BRKT ASSY 2.75" 7° (INCLUDES ITEM 5)
2	RAP5763	1	PIVOT BRKT ASSY 2.75" 7° TALL (INCLUDES ITEM 5)
3	RF5996		4-VTX-S 45° MALE ELBOW
4	R2329	1	PIVOT BOLT KIT 7/8 HEX
4A		2	HEX CAPSCREW 7/8 SPEC.
4B		2	BUSHING 1 1/8 OD PLD
5	R2511	1	STOP KIT
5A		1	HHCS 1/2 - 13 X 1 1/4 PLD

ITEM	PART NO.	QTY.	DESCRIPTION
5B		1	BUMPER URETHANE 2"
5C		1	WASHER STRUCT 1/2 PLD
5D		1	SPACER 5/8 OD
5E		1	HEX NUT 1/2 - 13 REG PLD
5F		1	LOCKWASHER 1/2 EXT. STAR
6	RAP5027	1	WARNING SWITCH SIDE PORT
7	RAP5453	1	FOOT WELDMENT 10" SQ.
8	R5491	1	EYE BOLT KIT
8A		1	3/8 - 16 X 3.5 EYE BOLT
8B		1	3/8 - 16 ESSNA LOCK NUT
9	R2365	1	SPRING KIT 2 3/4 X 13 1/2
9A		2	SPRING 2 3/4 X 13 1/2

Indented items are included with preceding item.

* Apply a thread locking adhesive such as loctite #271, 277, 242, or 569.

AP5572 3.50" X 13" STROKE 7° PIVOT 24000 LB



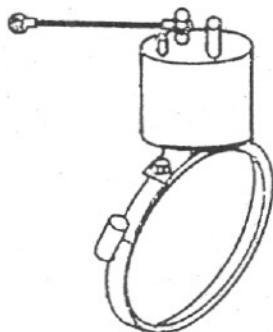
ITEM	PART NO.	QTY.	DESCRIPTION
	RAP5572		JACK 3.50" X 13 24S (COMPLETE ASSY)
1	RAP5577	1	CYLINDER ASSY 3.5 X 13"
2	RAP5573	1	PIVOT BRKT ASSY 7° J (INCLUDES ITEM 4)
3	R3003	1	PIVOT BOLT KIT
3A		2	HEX CAPSCREW 1" SPECIAL
3B		2	BUSHING 1 1/4 OD PLATED

ITEM	PART NO.	QTY.	DESCRIPTION
4	R5718	1	STOP KIT 1.5 X 4.5 X .5
4A		1	URETHANE BUMPER
4B		2	HEX NUT 1/4 - 20 ESNA PLD
4C		2	HHCS 1/4 - 20 X 1 - 1/4 PLD 5
4D		2	WASHER COMMON 1/4 PLD
5	RF3475	1	5-4-FTX-S MALE CONNECTER
6	RAP4707	1	SWITCH WARNING 2" TRAVEL
7	RAP5574	1	FOOT WELDMENT 12" SQ.
8	R2365	1	SPRING KIT 2 - 3/4 X 13 - 1/2 (2 SPRINGS PER R2365)

Indented items are included with preceding item.

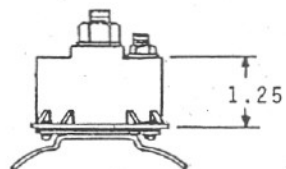
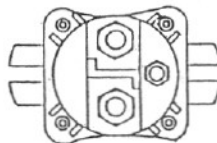
*Apply a thread locking adhesive such as Loctite #271, 277, 242, or 569.

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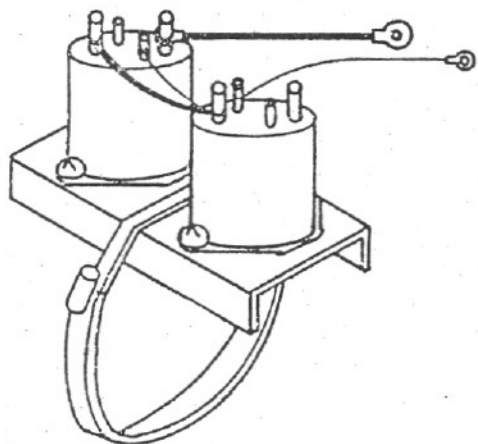
RAP5147 SOLENOID KIT INTERMIT

Pump solenoid for any four lever control system. Includes intermittent duty solenoid, battery cable, and band for mounting to power unit motor.



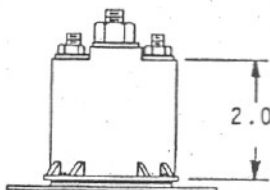
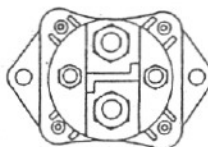
RAP4985 SOLENOID INTERMIT DUTY

Intermittent duty solenoid only. Same as RAP5147 but without battery cable and band.



R5231 SOLENOID KIT AU W/ BRKT

Pump solenoids for systems with computerized control panels. Includes two continuous duty solenoids, mounting brkt., band clamp and connecting wires. (Not for use on systems with touch panel controls).



RAP4276 SOLENOID CONTINUOUS DUTY

Same solenoid as in R5231 Solenoid Kit.

HYDRAULIC POWER UNIT SOLENOIDS



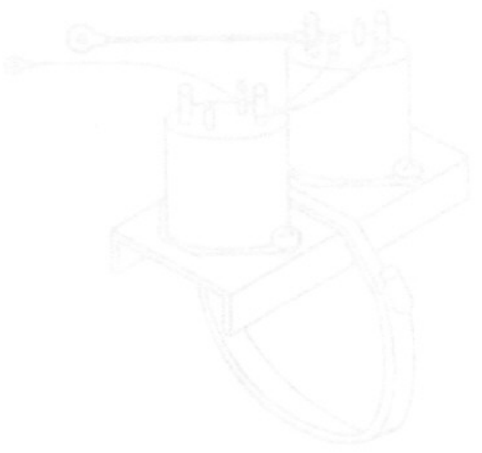
REAR KIT ASSEMBLY KIT

Kit includes for use with... includes... duty solenoid, battery cable, and band for mounting to power unit motor.



REAR KIT ASSEMBLY KIT

Information duty solenoid... See as REAR KIT but without battery cable and band.



REAR KIT ASSEMBLY KIT

Kit includes for systems with... includes... duty solenoid, mounting band, and connecting wires. For use on system with rear panel control.

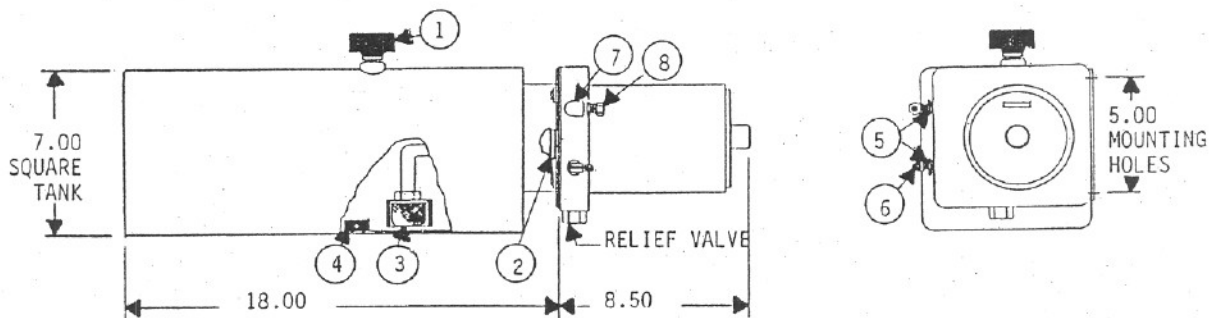


REAR KIT ASSEMBLY KIT

See also as REAR KIT... Kit.

PARTS MANUAL
HYDRAULIC POWER UNITS CON'T

L C P C T



STONE POWER UNIT

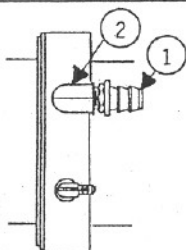
3.5 GAL. SIDE MOUNT - SUPPLIED 1987

ITEM	PART NO.	QTY.	DESCRIPTION
RAP4702			POWER UNIT SMS/3.5 (SIDE MOUNT 3.5 GAL. LESS SOLENOIDS) REPLACES THE FOLLOWING: AP4702 STONE 3.5 GAL. AP3910 & RAP3910 STONE 2.0 GAL., WEBSTER 2.0 GAL. SIDE MOUNT

See "Alternate Return Fittings" below or "R5302 Fitting Kit" on page MLP5.64 for Blue Bird Coaches.

ITEM	PART NO.	QTY.	DESCRIPTION
1	RP1474	1	BREATHER CAP
2	RP3515	1	"O" RING RESERVOIR
3	RP5292	1	STRAINER W/SHROUD
4	RP3526	1	MAGNET
5	RF2912	2	3/8 x 1/4 PTR-S REDUCER (3/8 NPT MALE x 1/4 NPT FM) (1 FITTING PER RF2912)
6	RF1514	1	4-4 CTX-S MALE ELBOW (1/4 NPT x 7/16 - 20 FOR 1/4 LINE)
7	RF3340	1	2202P-4-4 ELBOW (BRASS) (1/4 NPT MALE x 1/4 NPT FM)
8	RF1458	1	68 NTA-8-4 1/2 TUBE x 1/4 NPT (1/4 NPT x COMPRESSION FOR 1/2 OD TUBE)

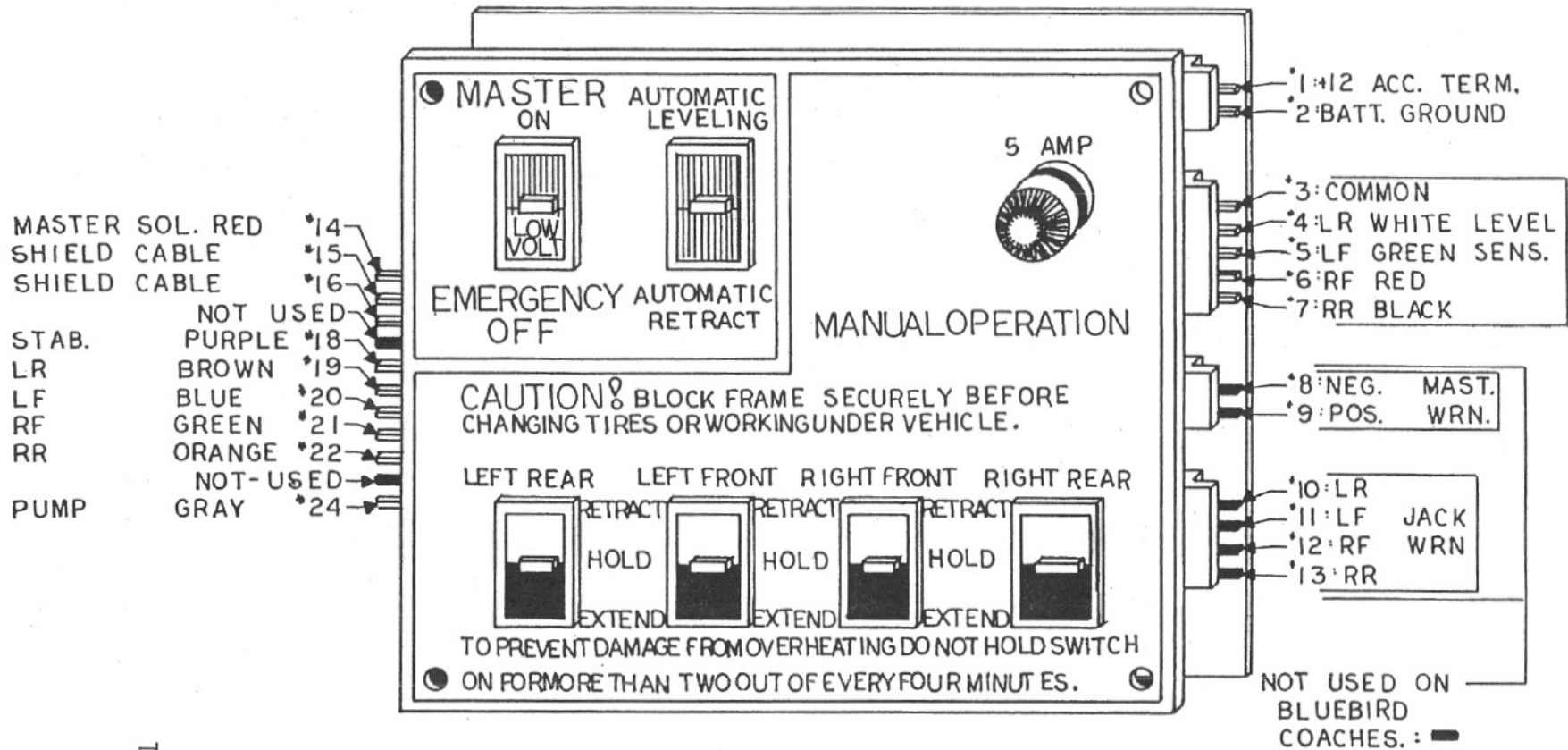
PUSHLOK FOR
1/2 ID RETURN LINE



ITEM	PART NO.	QTY.	DESCRIPTION
1	RF4385	1	PUSH-LOK 3/8 NPT x 1/2 HOSE (3/8 NPT x 1/2 ID HOSE)
2	RF4709	1	2202P-6-6 ELBOW (BRASS) (3/8 NPT MALE x 3/8 NPT FM)

ALTERNATE RETURN LINE FITTINGS

Used on some Blue Bird Coaches beginning in 1987.

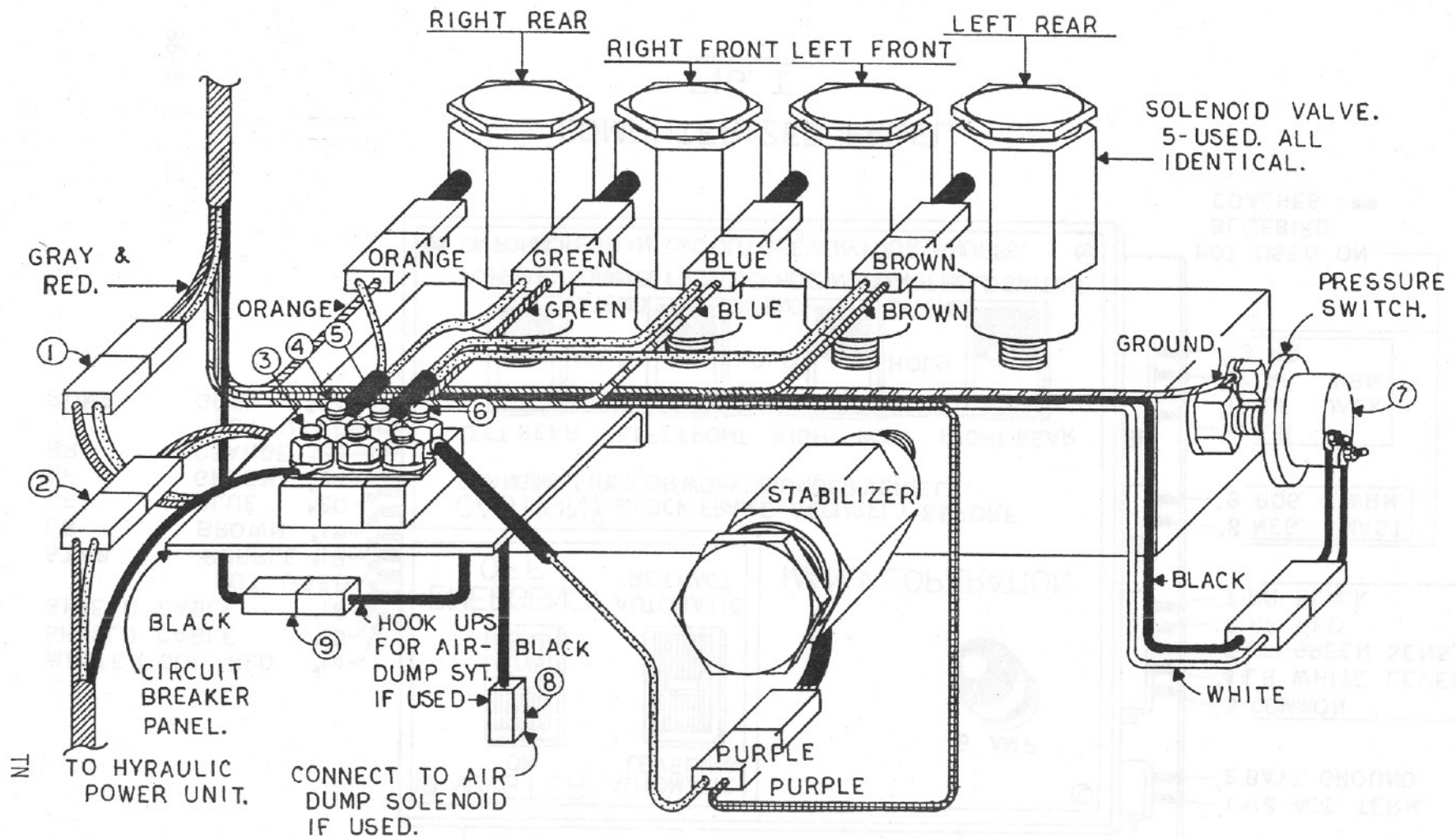


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COMPUTERIZED PANEL

FIG. I



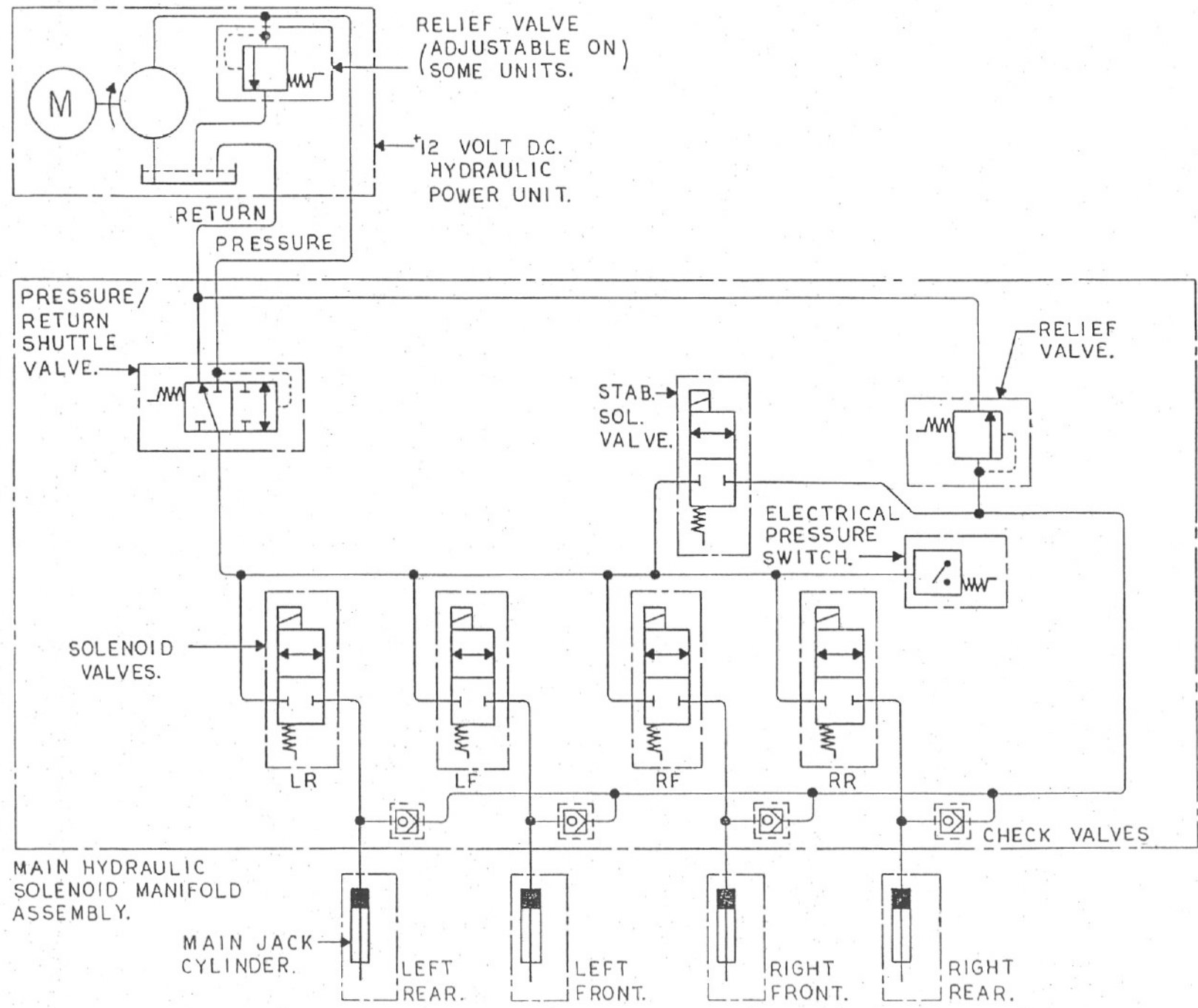
SOLENOID MANIFOLD MUST BE GROUNDED.

FIG. III

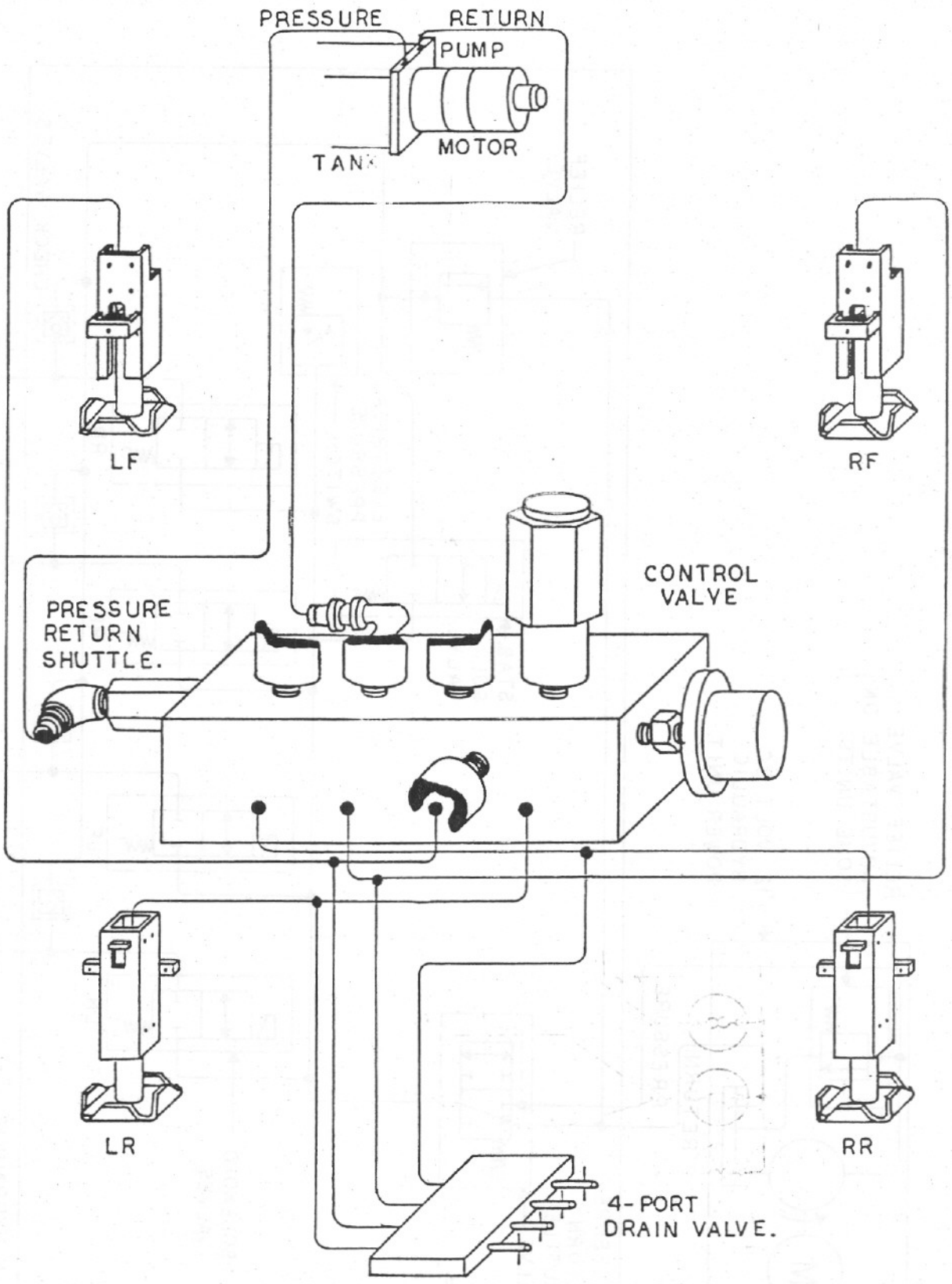
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HYDRAULIC SCHEMATIC
 COMPUTERIZED LEVELING SYSTEM
 WITHOUT HORIZONTAL/VERTICAL MOTION



MLS4,204 10/87



HYDRAULIC CIRCUIT
BLUEIRD NO HOR./VERT.

