

OWNER'S PARTS MANUAL

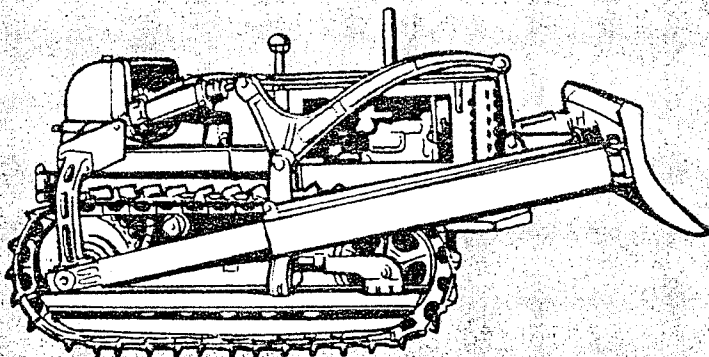
BUCYRUS-ERIE

Model TD-9

HYDRAULIC BULLGRADERS and BULLDOZERS

For Use With

INTERNATIONAL MODEL TD-9 CRAWLER TRACTORS



**BUCYRUS
ERIE**

Manufactured by **BUCYRUS-ERIE CO.**
Evansville, Indiana

WARRANTY

Bucyrus-Erie Company, hereinafter called 'Manufacturer', warrants each item of new equipment, and all spares and replacements now or hereafter furnished by it therefor, to be built in a workmanlike manner of sound high-grade material; and, under normal use and proper attention, to operate properly. Any claim made under this warranty must be presented in writing to Manufacturer, at South Milwaukee, Wisconsin, within three months after shipment by Manufacturer. Manufacturer's liability in any event is not to exceed the replacement value of the defective element f.o.b. works. In the case of units or parts purchased by Manufacturer, Manufacturer's liability shall not exceed the settlement which Manufacturer is able to obtain from its supplier. Manufacturer is to have the option of requiring the return of the alleged defective part, transportation charges prepaid, before recognizing any claim. Manufacturer is to have a reasonable length of time after recognition of claim in which to remedy any proved defect or replace any part proved to be defective. No allowance will be made for repairs or alterations undertaken without Manufacturer's written consent. No warranty whatever is given with respect to tractors. The foregoing warranty is in lieu of all tort liability and all other warranties, express or implied. If parts other than of the original manufacturer are used in replacement without Manufacturer's written consent, or if Distributor falls in arrears in making any payment, or if the equipment or tractor without Manufacturer's written consent is repaired or altered in such a way as in Manufacturer's judgment to reduce its stability or reliability, or if the equipment or tractor is subjected to misuse, negligence or accident, all warranties are hereby waived. Manufacturer is not to be liable for any warranties or representations, express or implied, not expressed in this paragraph. More specifically, but without restriction thereto, there is no representation or express or implied warranty that the equipment complies with the highway or other laws of any state. No agent, distributor or other person is authorized to give any other warranties, nor assume any other liability in tort or otherwise.

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INSTRUCTIONS FOR ORDERING TRACTOR EQUIPMENT PARTS

The illustrations in this manual are of GENERAL APPLICATION TO MACHINES of this model and MAY NOT SHOW YOUR EQUIPMENT ACCURATELY IN ALL DETAILS. We will furnish parts to fit the machine of which you give the serial number even if some of the illustrations do not show them quite as they actually appear on the equipment.

The terms "RIGHT" and "LEFT" as used in this manual mean right and left as viewed by the operator looking forward from the driver's seat toward the radiator.

Each item on the parts list is given a number corresponding to that shown on the illustration for easy identification. When ordering parts WE MUST HAVE

the following information:

1. THE SERIAL NUMBER found on the name plate attached to right hand rocker arm of your equipment (NOT THE TRACTOR NUMBER).
2. The reference number of the part wanted.
3. The name of the part wanted.
4. The quantity wanted.
5. If part has to be secured from factory (Bucyrus-Erie Co., Evansville, Ind.), state whether shipment is to be made by freight, express or parcel post. Mention any special routine or invoicing instructions.

BUCYRUS-ERIE COMPANY

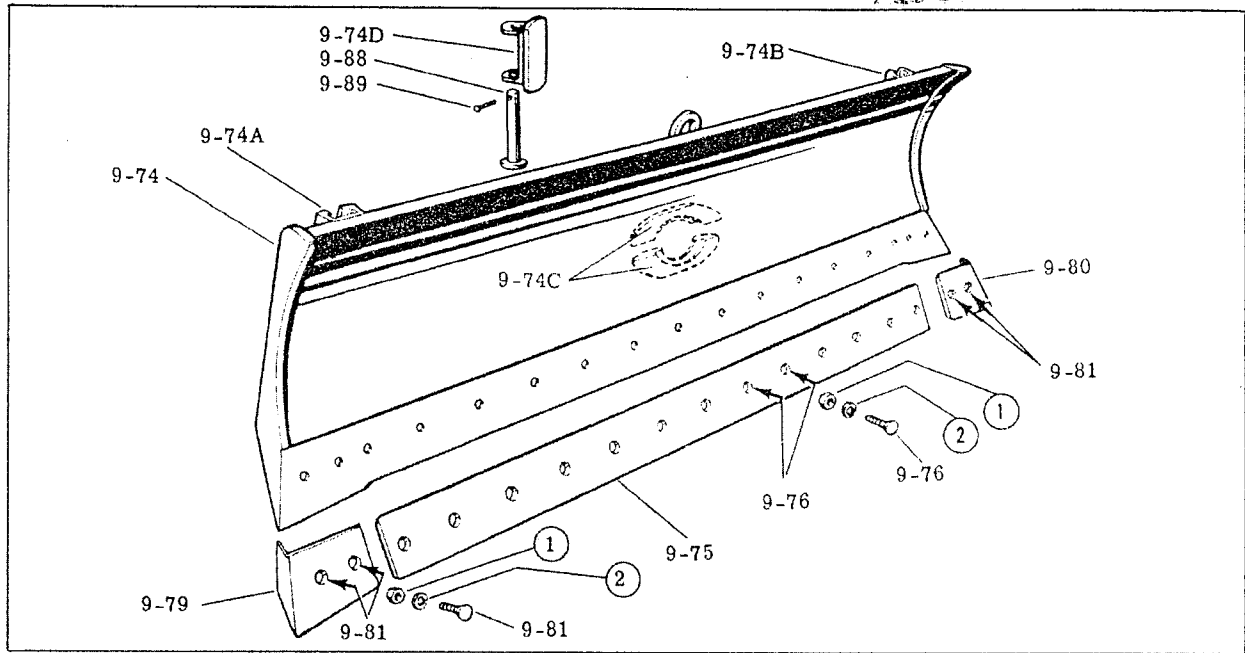
BE SURE TO GIVE SERIAL NUMBER OF BULLDOZER OR BULLGRADER (NOT THE TRACTOR).

EQUIPMENT SERIAL NUMBER _____

Record the serial number of your Bullgrader or Bulldozer here.

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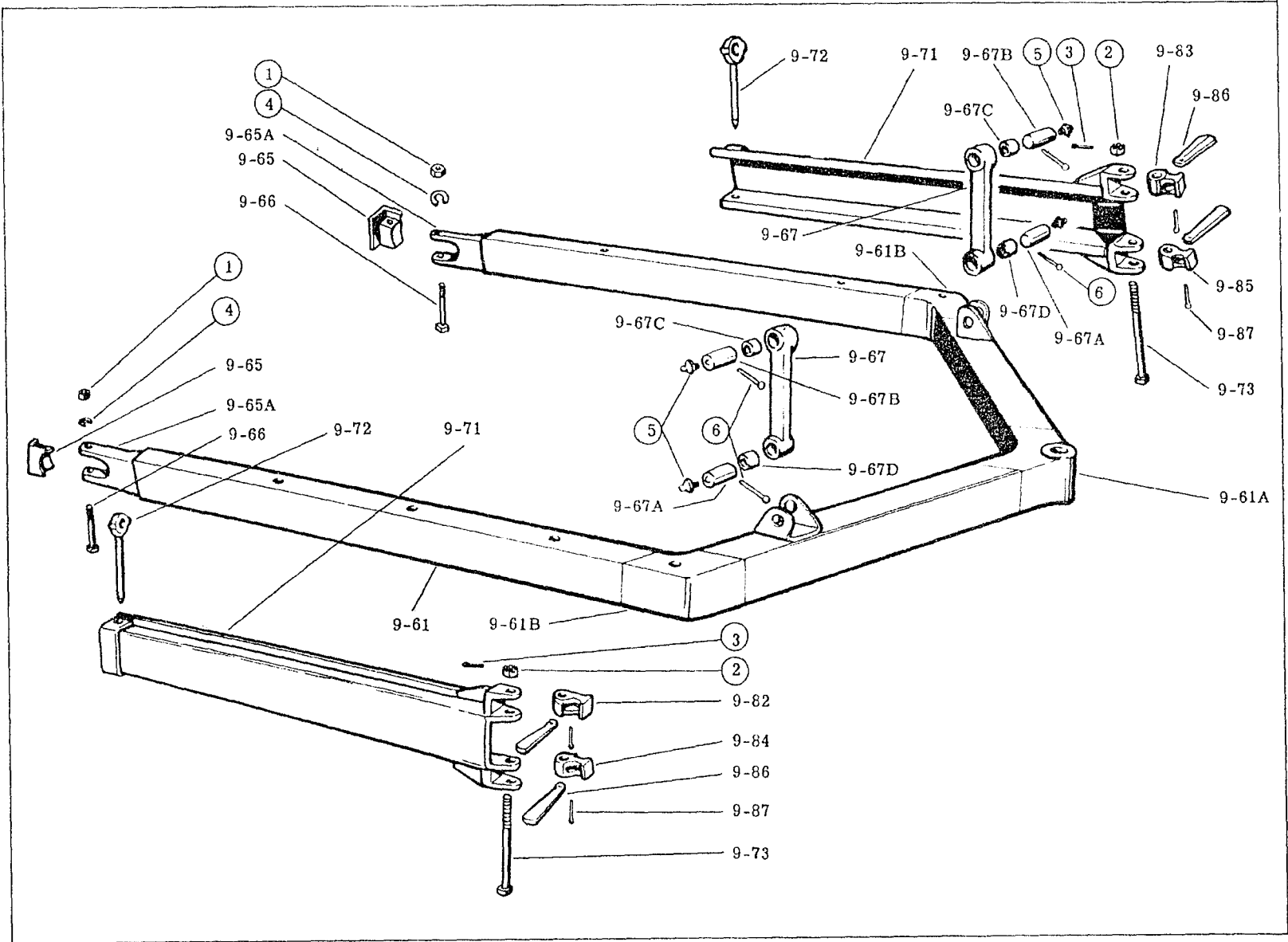


BULLGRADER BLADE ASSEMBLY

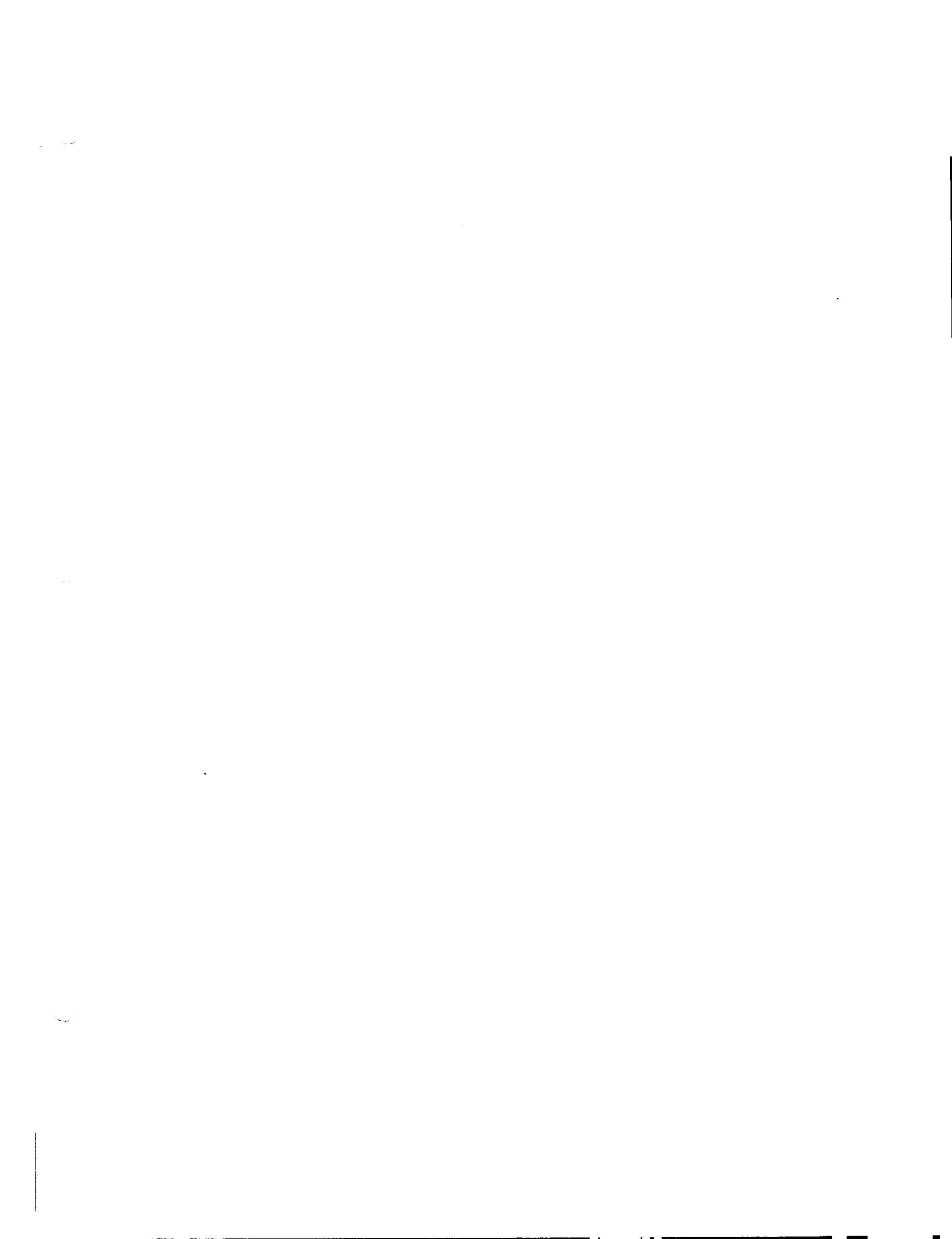
| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9-74 | Blade assembly w/cutting edge corner shoes and bolts | 1 |
| 9-74A | Blade adjusting bracket, right hand - - - - - | 1 |
| 9-74B | Blade adjusting bracket, left hand - - - - - | 1 |
| 9-74C | Blade swivel retainer - - - - - | 2 |
| 9-74D | Blade swivel - - - - - | 1 |
| 9-75 | Blade cutting edge - - - - - | 1 |
| 9-76 | Blade cutting edge bolt { wide gage w/nut and lockwasher { standard gage | 13 11 |
| 9-79 | Corner shoe, right hand - - - - - | 1 |
| 9-80 | Corner shoe, left hand - - - - - | 1 |
| 9-81 | Corner shoe bolt w/nut and lockwasher - - - - - | 4 |
| 9-88 | Blade king pin - - - - - | 1 |
| 9-89 | Blade king pin retainer - - - - - | 1 |

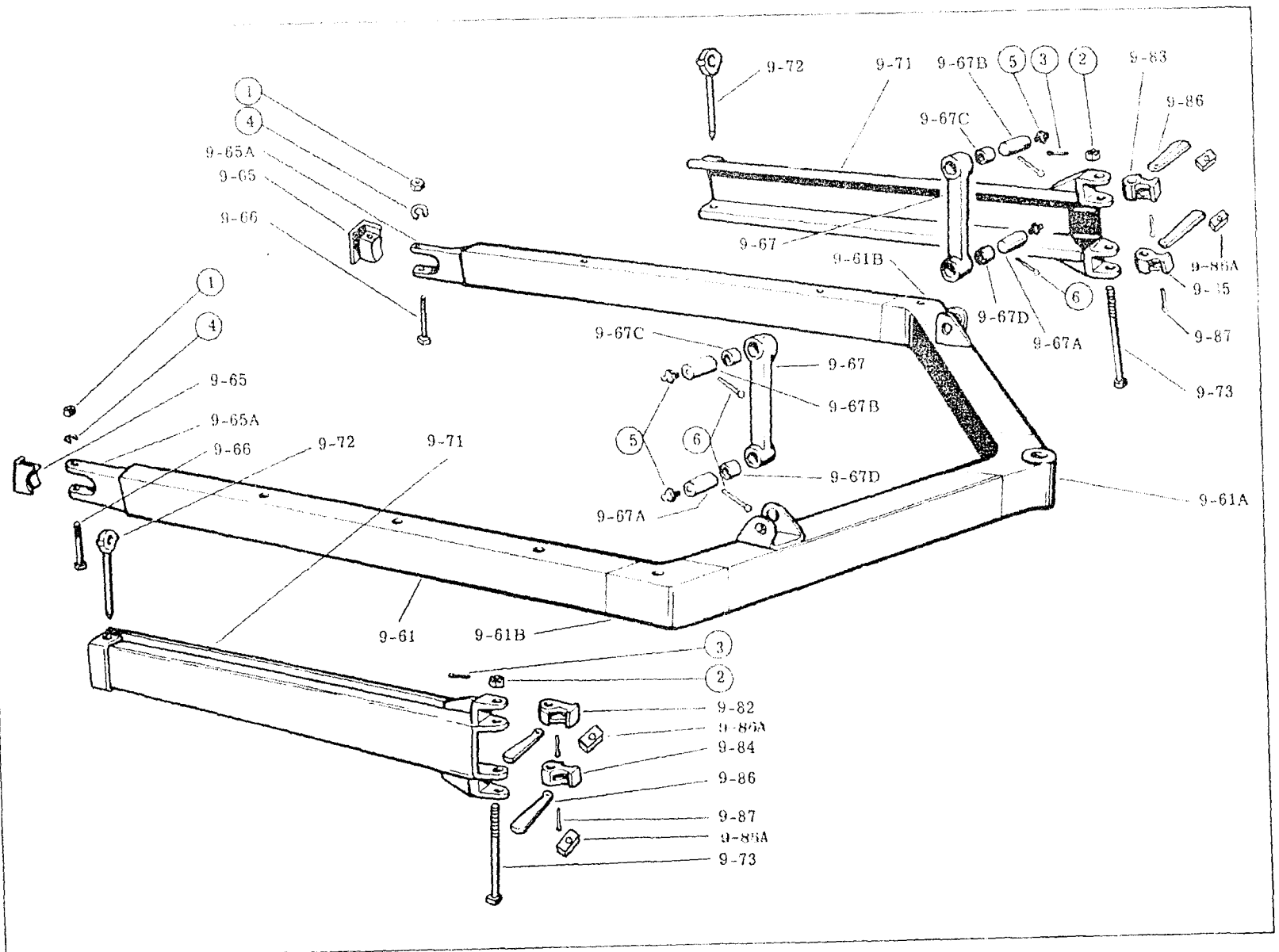
○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|-------------------------------|-------------|
| 1 | Hex nut, 3/4-in. NC wide gage | 17 |
| | standard gage - - - - - | 15 |
| 2 | Lockwasher, 3/4-in. wide gage | 17 |
| | standard gage - - - - - | 15 |



BULLGRADER MAIN FRAME





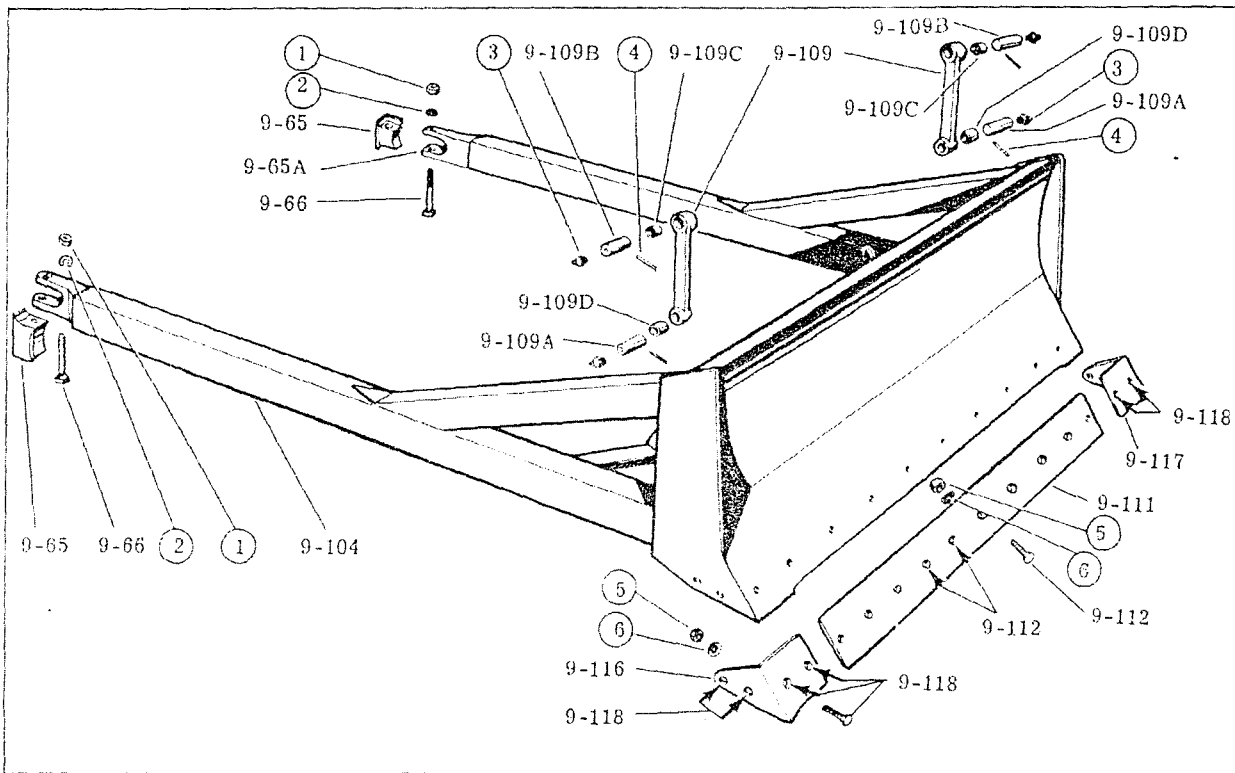
BULLGRADER MAIN FRAME

BULLGRADER MAIN FRAME

| Ref. No. | Part Name | Qty. Req'd. | Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|----------|--|-------------|
| 9-61 | Main frame with adapter blocks and bolts - - - - - | 1 | 9-67D | Connecting rod bushing - lower - - - - - | 2 |
| 9-61A | Main frame center casting - - - - - | 1 | 9-71 | Landside - - - - - | 2 |
| 9-61B | Main frame corner casting - - - - - | 2 | 9-72 | Landside stay pin - - - - - | 2 |
| 9-65 | Trunnion adapter block - - - - - | 2 | 9-73 | Landside tie pin - - - - - | 2 |
| 9-65A | Trunnion adapter - - - - - | 2 | 9-82 | Blade adjusting block, upper right - - - - - | 1 |
| 9-66 | Trunnion adapter block bolt w/nut and lockwasher | 2 | 9-83 | Blade adjusting block, upper left - - - - - | 1 |
| 9-67 | Connecting rod with bushings - - - - - | 2 | 9-84 | Blade adjusting block, lower right - - - - - | 1 |
| 9-67A | Connecting rod clevis pin - - - - - | 2 | 9-85 | Blade adjusting block, lower left - - - - - | 1 |
| 9-67B | Connecting rod pin - - - - - | 2 | 9-86 | Blade adjusting block wedge - - - - - | 4 |
| 9-67C | Connecting rod bushing - upper - - - - - | 2 | 9-87 | Blade adjusting block wedge retainer - - - - - | 4 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. | Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|----------|---|-------------|
| 1 | Hex nut, 7/8-in. NC - - - - - | 2 | 4 | Lockwasher, 7/8-in. - - - - - | 2 |
| 2 | Slotted hex nut, Amer. Std., heavy, C.P.S.F., 1-1/4-in. NC - - - - - | 2 | 5 | Grease fitting, straight hydraulic Alemite #1610, 1/8-in. - - - - - | 4 |
| 3 | Split pin, 1/4 x 2-1/2-in. - - - - - | 2 | 6 | Pin retainer - - - - - | 4 |

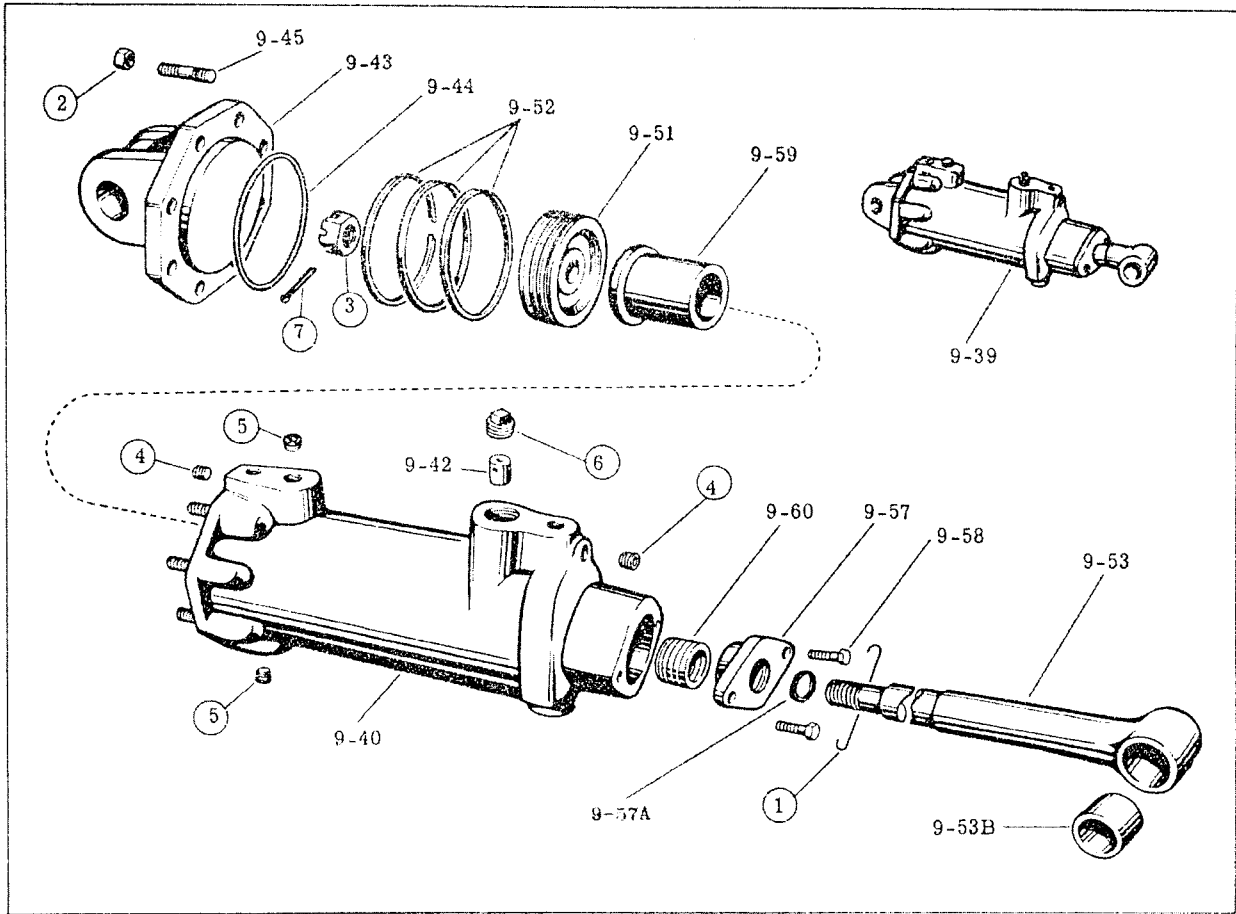


BULLDOZER PUSH ARM AND BLADE ASSEMBLY

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 9-65 | Trunnion adapter block - - - - - | 2 |
| 9-65A | Trunnion adapter- - - - - | 2 |
| 9-66 | Trunnion adapter block bolt with nut and lockwasher- - - - - | 2 |
| 9-104 | Push arm and blade with cutting edge, corner shoes, adapter blocks and bolts - - - - - | 1 |
| 9-109 | Connecting rod with bushings - - - - - | 2 |
| 9-109A | Connecting rod clevis pin - - - - - | 2 |
| 9-109B | Connecting rod pin- - - - - | 2 |
| 9-109C | Connecting rod bushing, upper - - - - - | 2 |
| 9-109D | Connecting rod bushing, lower - - - - - | 2 |
| 9-111 | Cutting edge - - - - - | 1 |
| 9-112 | Cutting edge plow bolt {wide gage w/nut and lockwasher {standard gage | 10 8 |
| 9-116 | Corner shoe, right hand - - - - - | 1 |
| 9-117 | Corner shoe, left hand- - - - - | 1 |
| 9-118 | Corner shoe bolt with nut and lockwasher - - - - - | 8 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Hex nut, 7/8-in. NC - - - - - | 2 |
| 2 | Lockwasher, 7/8-in. - - - - - | 2 |
| 3 | Grease fitting, straight hydraulic, Alemite #1610, 1/8-in. - - - - - | 4 |
| 4 | Pin retainer - - - - - | 4 |
| 5 | Hex nut, 3/4-in. NC wide gage - - - - - | 18 |
| | standard gage - - - - - | 16 |
| 6 | Lockwasher, 3/4-in. wide gage - - - - - | 18 |
| | standard gage - - - - - | 16 |



HOIST CYLINDER ASSEMBLY

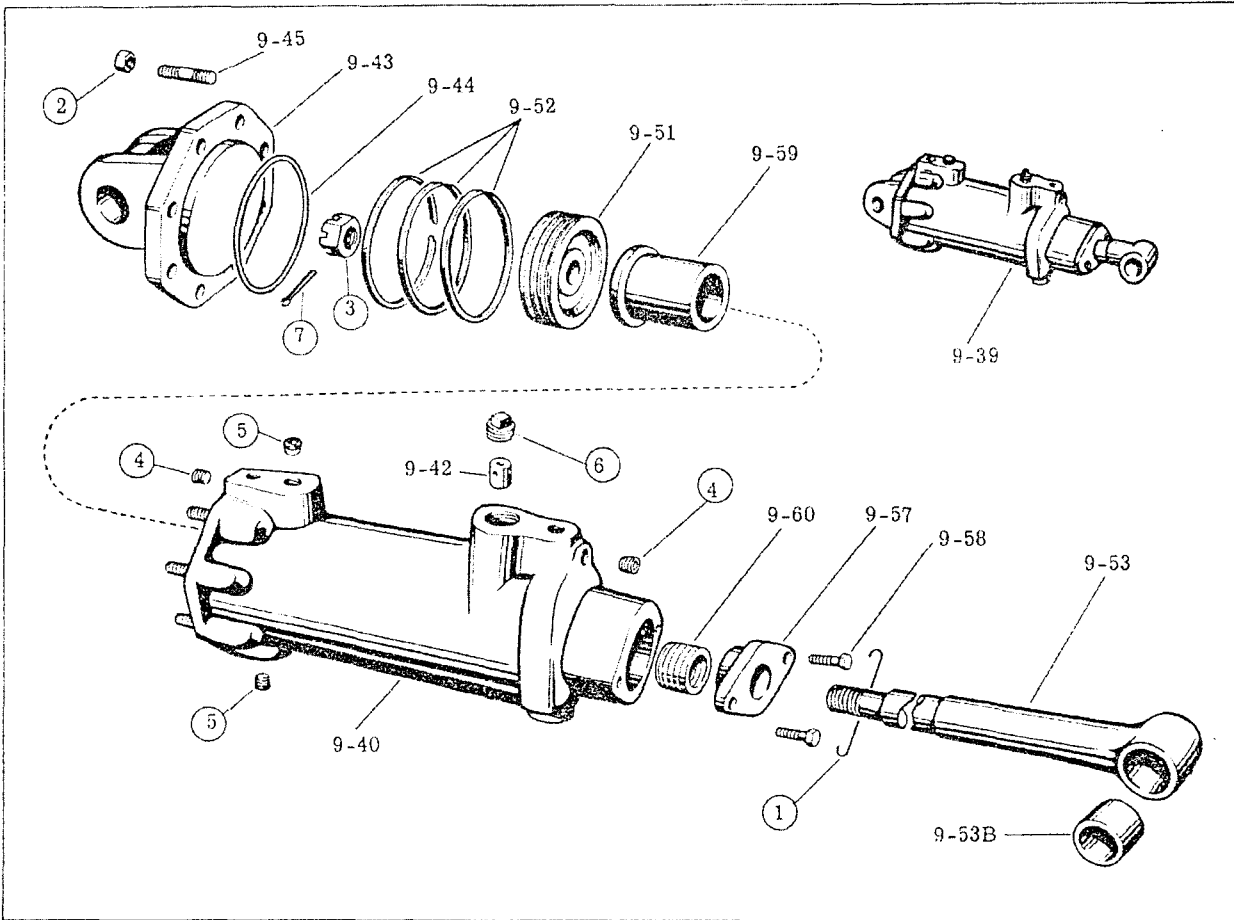
| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 9-39 | Hoist cylinder assembly - - - - - | 2 |
| 9-40 | Hoist cylinder with studs - - - - - | 2 |
| 9-42 | Hoist cylinder ball check retainer - - - - - | 2 |
| 9-43 | Hoist cylinder back head - - - - - | 2 |
| 9-44 | Hoist cylinder back head gasket - - - - - | 2 |
| 9-45 | Hoist cylinder back head stud - - - - - | 16 |
| 9-51 | *Hoist cylinder piston - - - - - | 2 |
| 9-52 | *Hoist cylinder piston ring - - - - - | 6 |
| 9-53 | Hoist cylinder piston rod with nut - - - - - | 2 |
| 9-53B | Hoist cylinder piston rod head bushing - - - - - | 2 |
| 9-57 | Hoist cylinder piston rod gland - - - - - | 2 |
| 9-57A | Hoist cylinder piston rod gland oil seal - - - - - | 2 |
| 9-58 | Hoist cylinder piston rod gland capscrew - - - - - | 4 |
| 9-59 | Hoist cylinder piston rod bushing - - - - - | 2 |
| 9-60 | Hoist cylinder piston rod packing - - - - - | 2 |

*Piston and rings can be supplied standard or 3/32" oversize. Specify when ordering.

MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Lockwire, #12 x 1-ft. | 2 |
| 2 | Hex nut, 3/4-in. NF | 16 |
| 3 | Slotted hex nut, Amer. Std. light C.P.S.F., 1-1/2-in. NF | 2 |

| Ref. No. | Part Name | Qty. Req'd. |
|----------|-----------------------------------|-------------|
| 4 | Pipe plug, ctsk hd, 1/2-in. | 4 |
| 5 | Pipe plug, ctsk hd, 3/4-in. | 4 |
| 6 | Pipe plug, solid sq hd, 1-1/4 in. | 2 |
| 7 | Split pin, 1/4 x 3-in. | 2 |



HOIST CYLINDER ASSEMBLY

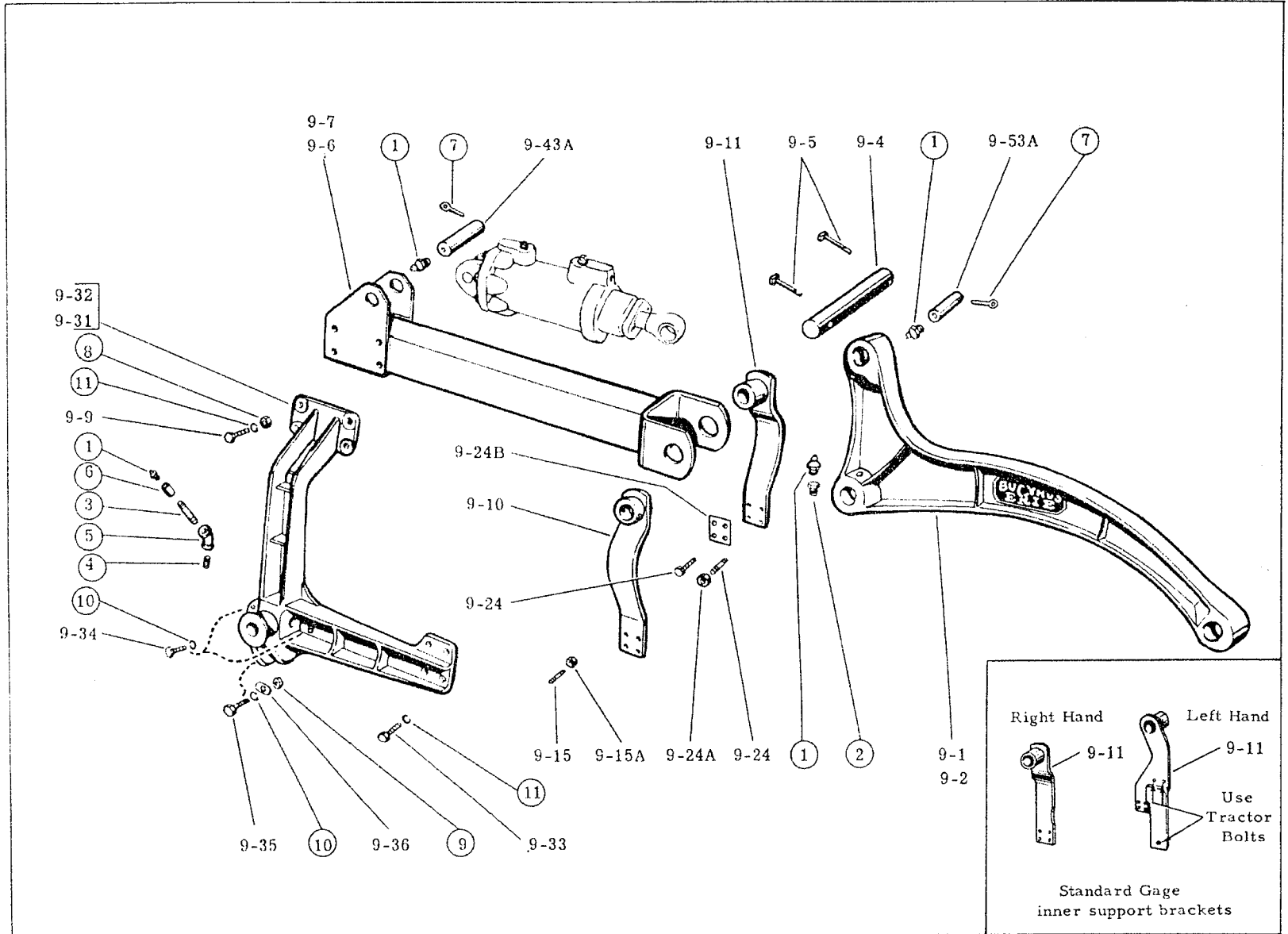
| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 9-39 | Hoist cylinder assembly - - - - - | 2 |
| 9-40 | Hoist cylinder with studs - - - - - | 2 |
| 9-42 | Hoist cylinder ball check retainer - - - - - | 2 |
| 9-43 | Hoist cylinder back head - - - - - | 2 |
| 9-44 | Hoist cylinder back head gasket - - - - - | 2 |
| 9-45 | Hoist cylinder back head stud - - - - - | 16 |
| 9-51 | *Hoist cylinder piston - - - - - | 2 |
| 9-52 | *Hoist cylinder piston ring - - - - - | 6 |
| 9-53 | Hoist cylinder piston rod with nut - - - - - | 2 |
| 9-53B | Hoist cylinder piston rod head bushing - - - - - | 2 |
| 9-57 | Hoist cylinder piston rod gland - - - - - | 2 |
| 9-58 | Hoist cylinder piston rod gland capscrew - - - - - | 4 |
| 9-59 | Hoist cylinder piston rod bushing - - - - - | 2 |
| 9-60 | Hoist cylinder piston rod packing - - - - - | 2 |

*Piston and rings can be supplied standard or 3/32" oversize. Specify when ordering.

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Lockwire, #12 x 1-ft. | 2 |
| 2 | Hex nut, 3/4-in. NF | 16 |
| 3 | Slotted hex nut, Amer. Std. light C.P.S.F., 1-1/2-in. NF | 2 |

| Ref. No. | Part Name | Qty. Req'd. |
|----------|-----------------------------------|-------------|
| 4 | Pipe plug, ctsk hd, 1/2-in. | 4 |
| 5 | Pipe plug, ctsk hd, 3/4-in. | 4 |
| 6 | Pipe plug, solid sq hd, 1-1/4 in. | 2 |
| 7 | Split pin, 1/4 x 3-in. | 2 |



ROCKER ARM AND SUPPORT

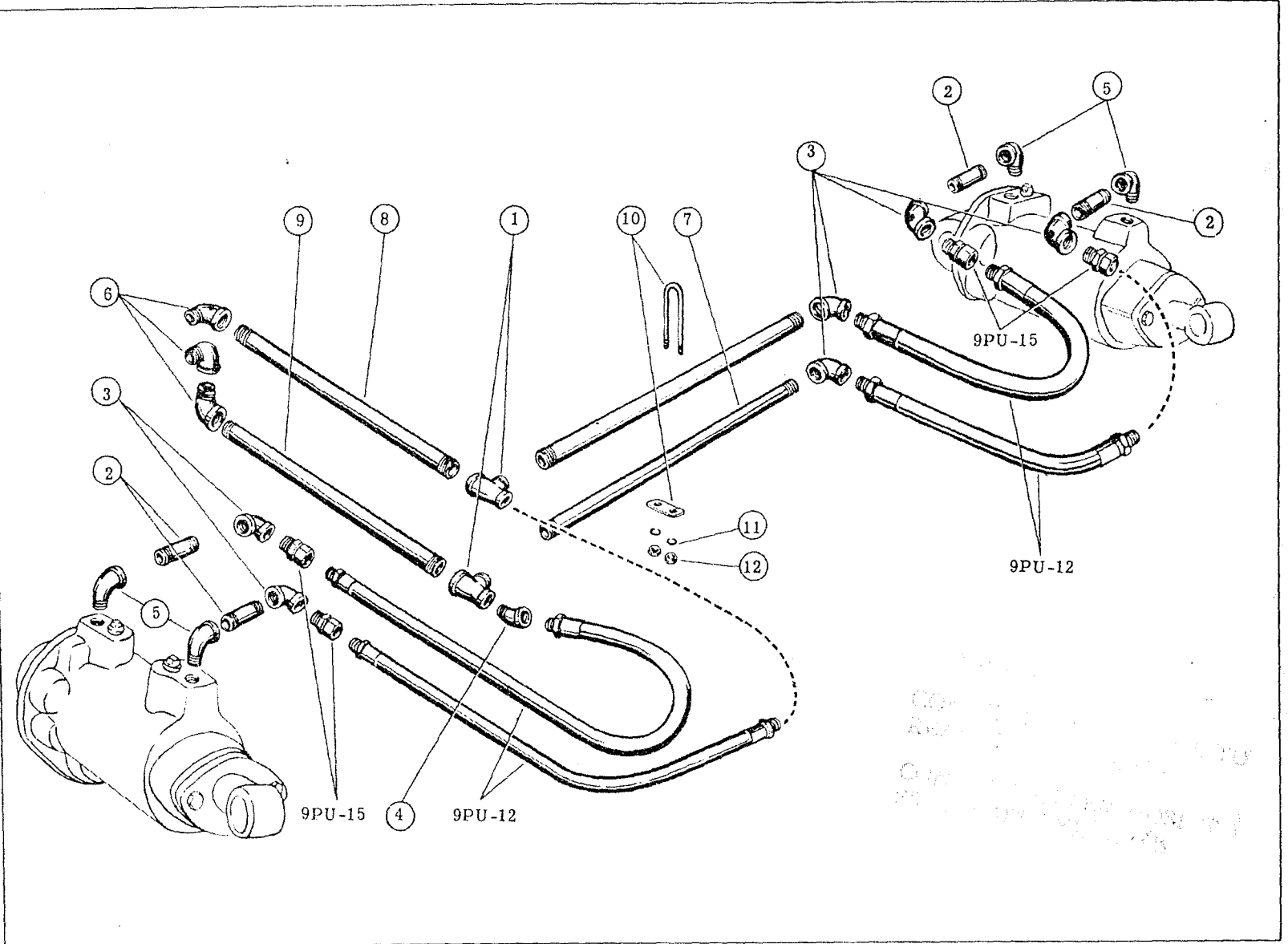
ROCKER ARM AND SUPPORT

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9-1 | Right rocker arm - - - - - | 1 |
| 9-2 | Left rocker arm - - - - - | 1 |
| 9-4 | Rocker arm shaft - - - - - | 2 |
| 9-5 | Rocker arm shaft retainer - - - - - | 4 |
| 9-6 | Right cylinder cradle - - - - - | 1 |
| 9-7 | Left cylinder cradle - - - - - | 1 |
| 9-9 | Cylinder cradle capscrew - - - - - | 8 |
| 9-10 | Cylinder cradle front outer support - - - - - | 2 |
| 9-11 | Cylinder cradle front inner support - - - - - | 2 |
| 9-15 | Cylinder cradle front outer support stud - - - - - | 8 |
| 9-15A | Cylinder cradle front outer support stud nut - - - - - | 8 |
| 9-24 | Cylinder cradle front inner support capscrew - standard gage - - - - - | 8 |
| | stud - wide gage - - - - - | 8 |
| 9-24A | Cylinder cradle front inner support stud nut - wide gage - - - - - | 8 |
| 9-24B | Cylinder cradle front inner support capscrew lock plate - standard gage - - - - - | 2 |
| 9-31 | Right cylinder cradle rear outer support - - - - - | 1 |
| 9-32 | Left cylinder cradle rear outer support - - - - - | 1 |
| 9-33 | Cylinder cradle rear outer support capscrew (front) | 8 |

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9-34 | Cylinder cradle rear outer support capscrew (rear) | 8 |
| 9-35 | Cylinder cradle rear outer support capscrew (lower) | 2 |
| 9-36 | Cylinder cradle rear outer support shim - - - - - | 10 |
| 9-43A | Hoist cylinder backhead pin - - - - - | 2 |
| 9-53A | Hoist cylinder piston rod pin - - - - - | 2 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Grease fitting, straight hydraulic, Alemite #1610, 1/8-in. - - - - - | 10 |
| 2 | Reducing bushing, 1/4 x 1/8-in. - - - - - | 4 |
| 3 | Extra heavy nipple, 1/8 x 4-in. - - - - - | 2 |
| 4 | Extra heavy close nipple, 1/8 x 3/4-in. - - - - - | 2 |
| 5 | Standard 45° elbow, 1/8-in. - - - - - | 2 |
| 6 | Standard pipe coupling, 1/8-in. - - - - - | 2 |
| 7 | Pin retainer - - - - - | 4 |
| 8 | Nut, 3/4-in. NF - - - - - | 8 |
| 9 | Nut, 5/8-in. NF - - - - - | 2 |
| 10 | Lockwasher, 5/8-in. - - - - - | 10 |
| 11 | Lockwasher, 3/4-in. - - - - - | 16 |



PIPING - VALVE TO CYLINDERS

PIPING - VALVE TO CYLINDERS

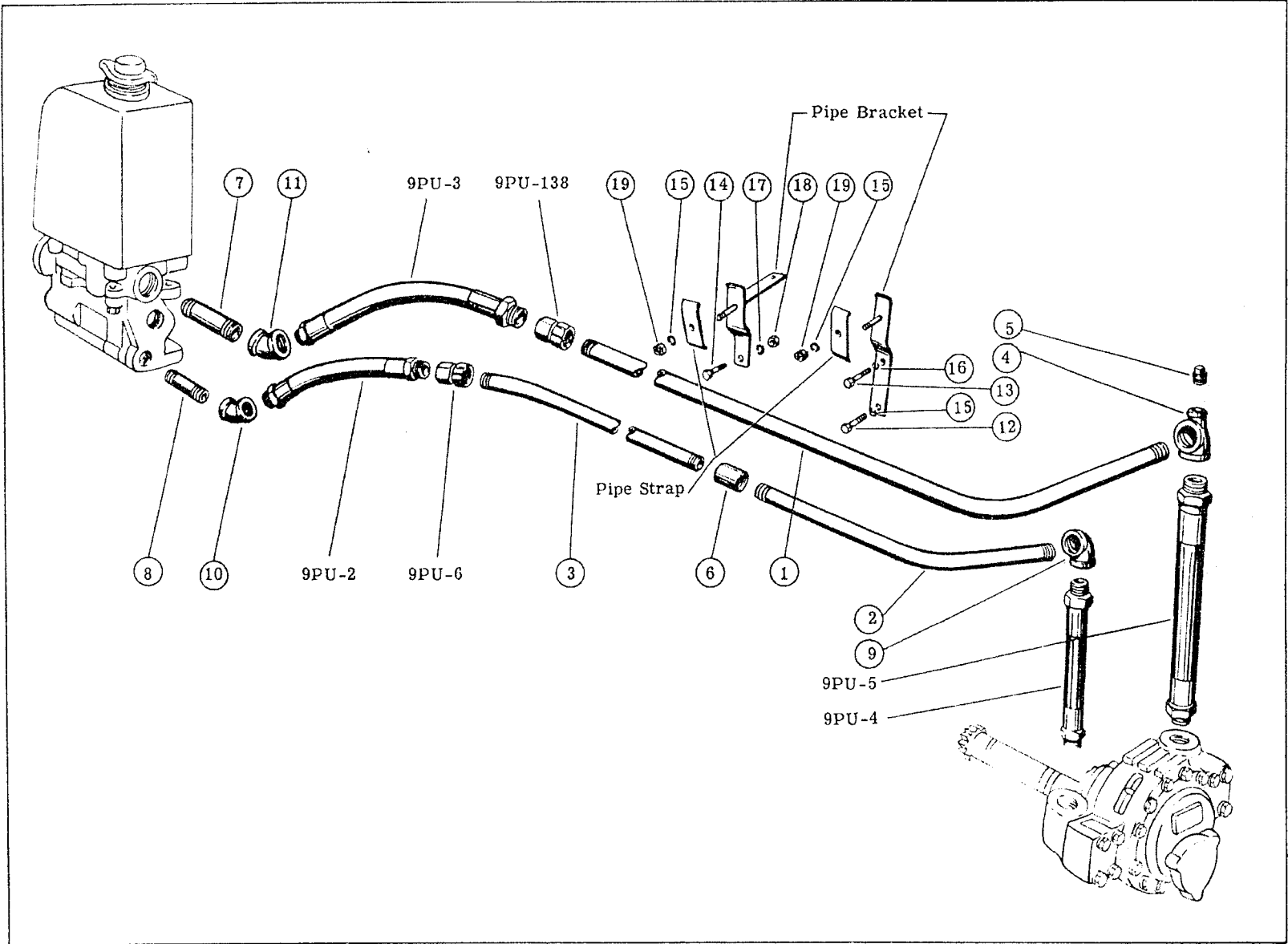
| Ref. No. | Part Name | Qty. Req'd. |
|----------|---------------------------------------|-------------|
| 9PU-12 | Pressure line cylinder hose - - - - - | 4 |
| 9PU-15 | Cylinder hose swivel - - - - - | 4 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 1 | Banded tee, 1 x 3/4 x 3/4-in. - - - - - | 2 |
| 2 | Standard nipple, 3/4 x 3-in. - - - - - | 4 |
| 3 | Banded elbow, 90° x 3/4-in.- - - - - | 6 |

○ MISCELLANEOUS PARTS (Cont'd.)

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 4 | Banded street elbow, 45° x 3/4-in. - - - - - | 1 |
| 5 | Banded street elbow, 90° x 3/4-in. - - - - - | 4 |
| 6 | Banded street elbow, 90° x 1-in. - - - - - | 3 |
| 7 | Standard pipe, 3/4 x 2 ft. 3-3/4-in. - - - - - | 2 |
| 8 | Standard pipe, 1 in. x 1 ft. 6-1/2-in. - - - - - | 1 |
| 9 | Standard pipe, 1 in. x 1 ft. 9-3/8-in. - - - - - | 1 |
| 10 | U-bolt w/strap, 3/8-in. - - - - - | 1 |
| 11 | Lockwasher, 3/8-in. - - - - - | 2 |
| 12 | Hex nut, 3/8-in. NC - - - - - | 2 |



PIPING - FRONT PUMP TO VALVE

PIPING - FRONT PUMP TO VALVE

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 9PU-2 | Pressure line hose - valve to pump - - - - - | 1 |
| 9PU-3 | Return line hose - tank to pump - - - - - | 1 |
| 9PU-4 | Pressure line pump hose - - - - - | 1 |
| 9PU-5 | Return line pump hose - - - - - | 1 |
| 9PU-6 | Pressure hose swivel - - - - - | 1 |
| 9PU-138 | Return hose swivel - - - - - | 1 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Standard galvanized pipe, 1-1/4 x 7 ft. 9-1/4-in. - - | 1 |
| 2 | Standard galvanized pipe, 1 x 2 ft. 11-7/8-in. - - - - | 1 |
| 3 | Standard galvanized pipe, 1 x 5 ft. 0-9/16-in. - - - - | 1 |
| 4 | Banded tee, 1-1/4 x 3/4 x 1-1/4-in. - - - - - | 1 |
| 5 | Pipe plug, sq hd, 3/4-in. - - - - - | 1 |

○ MISCELLANEOUS PARTS (Cont'd.)

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 6 | Coupling, 1 x 2-in. - - - - - | 1 |
| 7 | Standard nipple, 1-1/4 x 5-in. - - - - - | 1 |
| 8 | Standard nipple, 1 x 4-in. - - - - - | 1 |
| 9 | Banded elbow, 90 ^o x 1-in. - - - - - | 1 |
| 10 | Banded elbow, 45 ^o x 1-in. - - - - - | 1 |
| 11 | Banded elbow, 45 ^o x 1-1/4-in. - - - - - | 1 |
| 12 | Capscrew, 1/2 NC x 1-1/4-in. - - - - - | 1 |
| 13 | Capscrew, 5/16 NC x 1-in. - - - - - | 1 |
| 14 | Bolt, 3/8 NC x 1-1/4-in. - - - - - | 1 |
| 15 | Lockwasher, 1/2-in. - - - - - | 3 |
| 16 | Lockwasher, 5/16-in. - - - - - | 1 |
| 17 | Lockwasher, 3/8-in. - - - - - | 1 |
| 18 | Hex nut, 3/8-in. NC - - - - - | 1 |
| 19 | Hex nut, 1/2-in. NC - - - - - | 2 |

FRONT PUMP ASSEMBLY

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU-17 | Pump complete - - - - - | 1 |
| 9PU-18 | Pump gear - - - - - | 2 |
| 9PU-19 | Pump drive shaft - - - - - | 1 |
| 9PU-20 | Pump driven shaft - - - - - | 1 |
| 9PU-21 | Pump wear plate - - - - - | 2 |
| 9PU-22 | Pump housing gasket - - - - - | 8 |
| 9PU-27 | Pump bearing - - - - - | 4 |
| 9PU-28 | Pump adapter gasket - - - - - | 1 |
| 9PU-29 | Pump adapter shaft with coupling (9PU-276) - | 1 |
| 9PU-36 | *Drive shaft rear seal seat assembly (includes seat ring 9PU-278) - - - - - | 1 |
| 9PU-37 | *Drive shaft rear seal assembly (includes 9PU-279 to 9PU-283 inc.) - - - - - | 1 |
| 9PU-49 | Adapter plate bearing - - - - - | 1 |
| 9PU-112 | Pump check valve plunger - - - - - | 4 |
| 9PU-113 | Pump drive shaft washer - - - - - | 1 |
| 9PU-114 | *Drive shaft front seal assembly (includes 9PU-113 and 9PU-285 to 9PU-289 inc.) - - | 1 |
| 9PU-115 | *Drive shaft front seal seat assembly (includes seal ring 9PU-290) - - - - - | 1 |
| 9PU-116 | Pressure line pump manifold - - - - - | 1 |
| 9PU-117 | Return line pump manifold - - - - - | 1 |
| 9PU-120 | Pump housing capscrew - - - - - | 12 |
| 9PU-122 | Pump shaft key - - - - - | 1 |
| 9PU-123 | Manifold gasket - - - - - | 2 |
| 9PU-125 | Adapter plate - - - - - | 1 |
| 9PU-134 | Starting crank poppet - - - - - | 1 |
| 9PU-135 | Starting crank poppet spring - - - - - | 1 |
| 9PU-136 | Starting crank poppet housing - - - - - | 1 |
| 9PU-140 | Drive or driven shaft snap ring - - - - - | 4 |
| 9PU-169 | Check valve spring - - - - - | 4 |
| 9PU-181 | Manifold capscrew with lockwasher - - - - - | 8 |
| 9PU-182 | Pump capscrew with lockwasher - - - - - | 4 |
| 9PU-189 | Crank assembly - - - - - | 1 |
| 9PU-193 | Crank ratchet with handle - - - - - | 1 |

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 9PU-274 | Pump cover - - - - - | 1 |
| 9PU-275 | Adapter end cover - - - - - | 1 |
| 9PU-276 | Adapter shaft coupling - - - - - | 1 |
| 9PU-278 | †Rear seal seat ring (included with 9PU-36) - - | 1 |
| 9PU-279 | †Rear seal ring (included with 9PU-37) - - - - | 1 |
| 9PU-280 | †Rear seal cup (included with 9PU-37) - - - - | 1 |
| 9PU-281 | †Rear seal washer (included with 9PU-37) - - | 1 |
| 9PU-282 | †Rear seal spring separating washer (included with 9PU-37) - - - - - | 2 |
| 9PU-283 | †Rear seal spring (included with 9PU-37) - - - | 5 |
| 9PU-284 | Adapter plate capscrew with lockwasher - - - | 6 |
| 9PU-285 | †Front seal ring (included with 9PU-114) - - - | 1 |
| 9PU-286 | †Front seal cup (included with 9PU-114) - - - | 1 |
| 9PU-287 | †Front seal ring washer (included with 9PU-114) | 1 |
| 9PU-288 | †Front seal spring separating washer (included with 9PU-114) - - - - - | 2 |
| 9PU-289 | †Front seal spring (included with 9PU-114) - - | 8 |
| 9PU-290 | †Front seal seat ring (included with 9PU-115) - | 1 |
| 9PU-293 | Pump housing - - - - - | 1 |
| 9PU-294 | Pump cap - - - - - | 1 |
| 9PU-295 | Pump cap gasket - - - - - | 1 |
| 9PU-340 | Pump dowel - - - - - | 2 |
| 9PU-341 | Pump dowel - - - - - | 4 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Lockwasher, 1/2-in. - - - - - | 14 |
| 2 | Lockwasher, 3/4-in. - - - - - | 4 |
| 3 | Grease fitting, straight hydraulic, Alemite #1610, 1/8-in. - - - - - | 2 |

*When replacement of either seal seat 9PU-36 or 9PU-115 or seal 9PU-37 or 9PU-114 is necessary, be sure to replace both seal and seat.

†Not furnished separately.

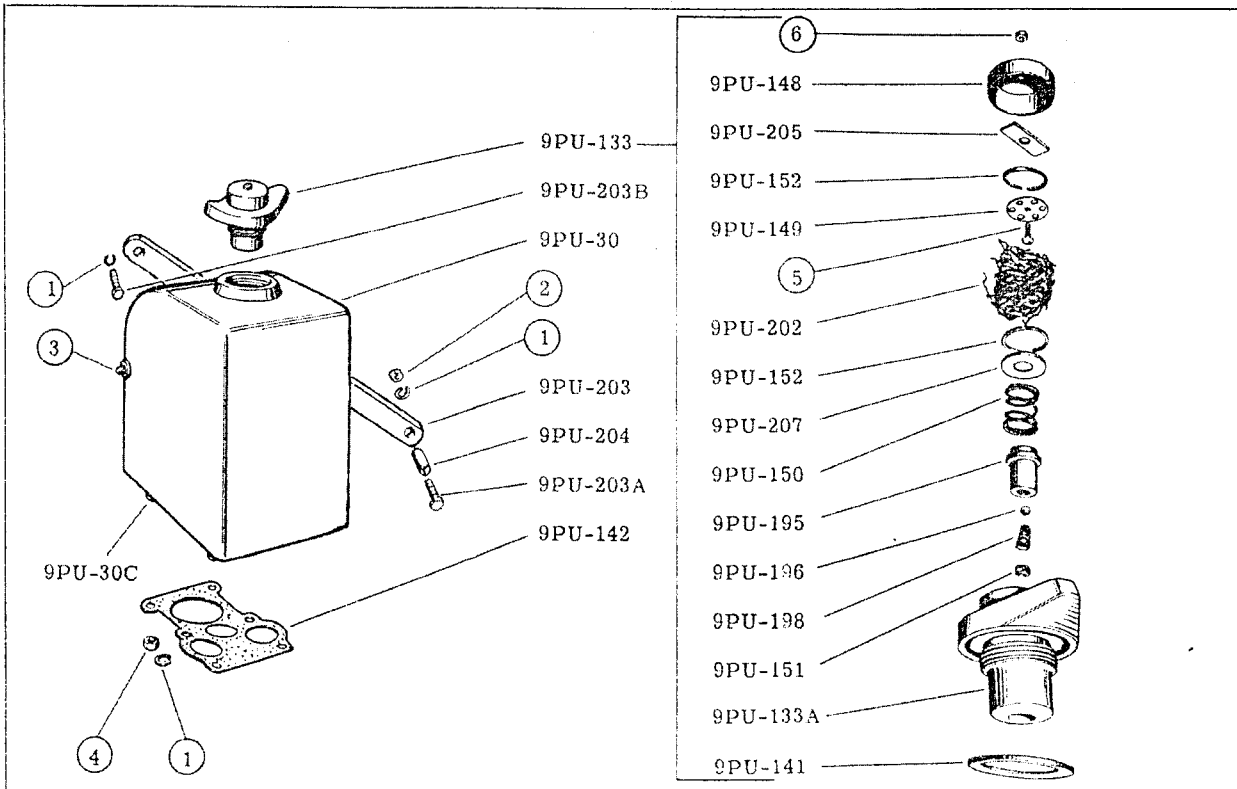
SINGLE CONTROL VALVE ASSEMBLY

| Ref. No. | Part Name | Qty. Req'd. | Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|----------|--|-------------|
| 9PU-1 | Valve complete - - - - - | 1 | 9PU-244 | Check valve cap - - - - - | 1 |
| 9PU-101 | Plunger oil seal - - - - - | 4 | 9PU-251 | Unloading valve gasket - - - - - | 1 |
| 9PU-102 | Rear oil seal retainer washer - - - - - | 1 | 9PU-252 | Load control valve set screw gasket - - - - - | 1 |
| 9PU-103 | Plunger eye - - - - - | 1 | 9PU-253 | Check valve gasket - - - - - | 1 |
| 9PU-104 | Load control valve seat - - - - - | 1 | 9PU-255 | Load control valve gasket - - - - - | 2 |
| 9PU-105 | Load control valve ball - - - - - | 1 | 9PU-256 | Housing ring gasket - - - - - | 1 |
| 9PU-106 | Load control valve spring - - - - - | 1 | 9PU-257 | Housing ring gasket - - - - - | 1 |
| 9PU-107 | Load control valve adjusting screw - - - - - | 1 | 9PU-258 | Housing ring gasket - - - - - | 1 |
| 9PU-108 | Load control valve adjusting screw cap - - - - - | 1 | 9PU-261 | Check valve compression spring - - - - - | 1 |
| 9PU-109 | Load control valve adjusting screw cap gasket - - - - - | 1 | 9PU-263 | End cover round head machine screw with lockwasher - - - - - | 3 |
| 9PU-110 | Load control valve adjusting screw acorn nut - - - - - | 1 | 9PU-264 | Square head pipe plug - - - - - | 1 |
| 9PU-111 | Oil seal retainer plate - - - - - | 1 | 9PU-265 | Square head pipe plug - - - - - | 1 |
| 9PU-234 | High pressure valve section assembly (lower section) - | 1 | 9PU-267 | Retainer plate round head machine screw with lockwasher - - - - - | 4 |
| 9PU-234A | Valve housing capscrew with lockwasher - - - - - | 5 | 9PU-268 | Float relief valve gasket - - - - - | 1 |
| 9PU-234F | Valve foundation bolt with nut and lockwasher - - - - - | 2 | 9PU-269 | Operating plunger capscrew with lockwasher - - - - - | 1 |
| 9PU-235 | Flow diverting plunger - - - - - | 1 | 9PU-270 | Operating plunger washer - - - - - | 2 |
| 9PU-237 | Low pressure valve section assembly (upper section) - | 1 | 9PU-271 | Float relief valve spring - - - - - | 1 |
| 9PU-238 | End cover - - - - - | 1 | 9PU-272 | Float relief valve ball - - - - - | 1 |
| 9PU-239 | Unloading valve housing - - - - - | 1 | 9PU-273 | Float relief valve cap - - - - - | 1 |
| 9PU-240 | Unloading valve housing cap - - - - - | 1 | 9PU-277 | *Operating plunger - - - - - | 1 |
| 9PU-241 | Unloading valve housing spring - - - - - | 1 | 9PU-291 | Load control valve spring seat - - - - - | 1 |
| 9PU-242 | Unloading valve ball - - - - - | 1 | | | |
| 9PU-243 | Check valve plunger - - - - - | 1 | | | |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Jam nut, 1/2-in. NF - - - - - | 1 |
| 2 | Nut, 1/2-in. NC - - - - - | 2 |
| 3 | Lockwasher, 1/2-in. - - - - - | 8 |
| 4 | Lockwasher, 5/16-in. - - - - - | 3 |
| 5 | Machine screw, rd hd, 3/8 NC x 3/8-in. - - - - - | 1 |
| 6 | Hollow set screw, cup pt, 3/8 NC x 1/2-in. - - - - - | 1 |
| 7 | Nut, 1/2-in. NF - - - - - | 1 |
| 8 | Lockwasher, 1/4-in. - - - - - | 4 |

*Note: When ordering operating plunger only, specify whether plunger is to be .005" or .010" oversize.



OIL TANK AND FILLER CAP ASSEMBLY

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU-30 | Oil tank - - - - - | 1 |
| 9PU-30C | Oil tank stud with nut and lockwasher - - - - - | 6 |
| 9PU-133 | Filler cap assembly - - - - - | 1 |
| 9PU-133A | Filler cap - - - - - | 1 |
| 9PU-141 | Filler cap gasket - - - - - | 1 |
| 9PU-142 | Valve gasket - - - - - | 1 |
| 9PU-148 | Filler cap cover - - - - - | 1 |
| 9PU-149 | Filler cap washer - - - - - | 1 |
| 9PU-150 | Filler cap spring - - - - - | 1 |
| 9PU-151 | Hollow lock screw - - - - - | 1 |
| 9PU-152 | Filler cap snap ring - - - - - | 2 |
| 9PU-195 | Check ball seat - - - - - | 1 |
| 9PU-196 | Check ball - - - - - | 1 |
| 9PU-198 | Check ball spring - - - - - | 1 |
| 9PU-202 | Copper wool - - - - - | 1 oz. |
| 9PU-203 | Oil tank brace - - - - - | 1 |
| 9PU-203A | Oil tank brace bolt with nut and lockwasher - - - - - | 1 |
| 9PU-203B | Oil tank brace capscrew with lockwasher - - - - - | 1 |
| 9PU-204 | Oil tank brace spacer - - - - - | 1 |
| 9PU-205 | Filler cap spacer - - - - - | 1 |
| 9PU-207 | Filler cap washer - - - - - | 1 |

○ MISCELLANEOUS PARTS

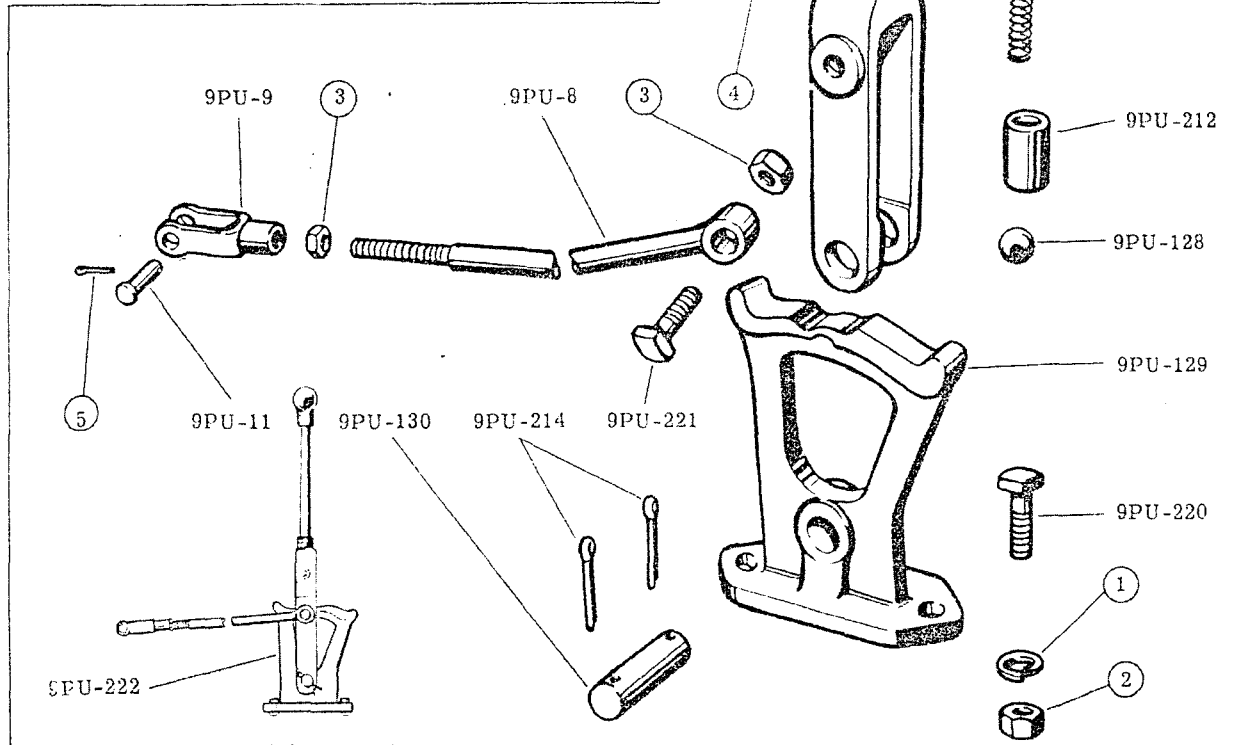
| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Lockwasher, 1/2-in. - - - - - | 8 |
| 2 | Nut, 1/2-in. NC - - - - - | 1 |
| 3 | Pipe plug, sq hd, 1/4-in. - - - - - | 1 |
| 4 | Nut, 1/2-in. NF - - - - - | 6 |
| 5 | Machine screw, rd hd, 1/4 NC x 3/4-in. - - - - - | 1 |
| 6 | Nut, 1/4-in. NC - - - - - | 1 |

CONTROL LEVER ASSEMBLY

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU7 | Control lever with nuts - - - - - | 1 |
| 9PU8 | Reach rod with nut - - - - - | 1 |
| 9PU9 | Reach rod end - - - - - | 1 |
| 9PU11 | Reach rod end pin - - - - - | 1 |
| 9PU126 | Control lever spring - - - - - | 1 |
| 9PU128 | Control lever ball - - - - - | 1 |
| 9PU129 | Control lever quadrant - - - - - | 1 |
| 9PU130 | Control lever pin - - - - - | 1 |
| 9PU211 | Control lever yoke - - - - - | 1 |
| 9PU212 | Control lever ball follower - - - - - | 1 |
| 9PU214 | Control lever pin split pin - - - - - | 2 |
| 9PU218 | Control lever hand grip - - - - - | 1 |
| 9PU220 | Control lever quadrant bolt with nut and lockwasher - - - - - | 2 |
| 9PU221 | Control lever quadrant capscrow with nut - - - - - | 1 |
| 9PU222 | Control lever assembly - - - - - | 1 |

MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Lockwasher, 1/2-in. - - - - - | 2 |
| 2 | Hex nut, 1/2-in. NC - - - - - | 2 |
| 3 | Jam nut, 1/2-in. NF - - - - - | 2 |
| 4 | Grease fitting, straight hydraulic, Alemite #1610, 1/8-in. - - - - - | 1 |
| 5 | Hex nut, 5/8-in. NC - - - - - | 2 |
| 6 | Split pin, 1/8 x 7/8-in. - - - - - | 1 |

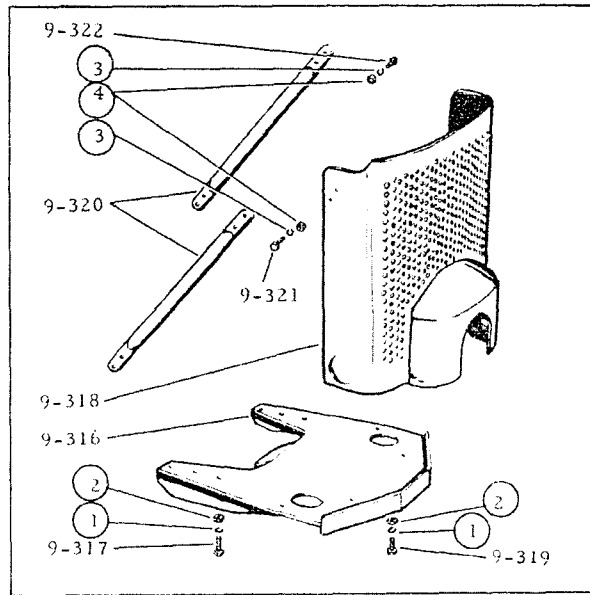


BUMPER AND RADIATOR GUARD

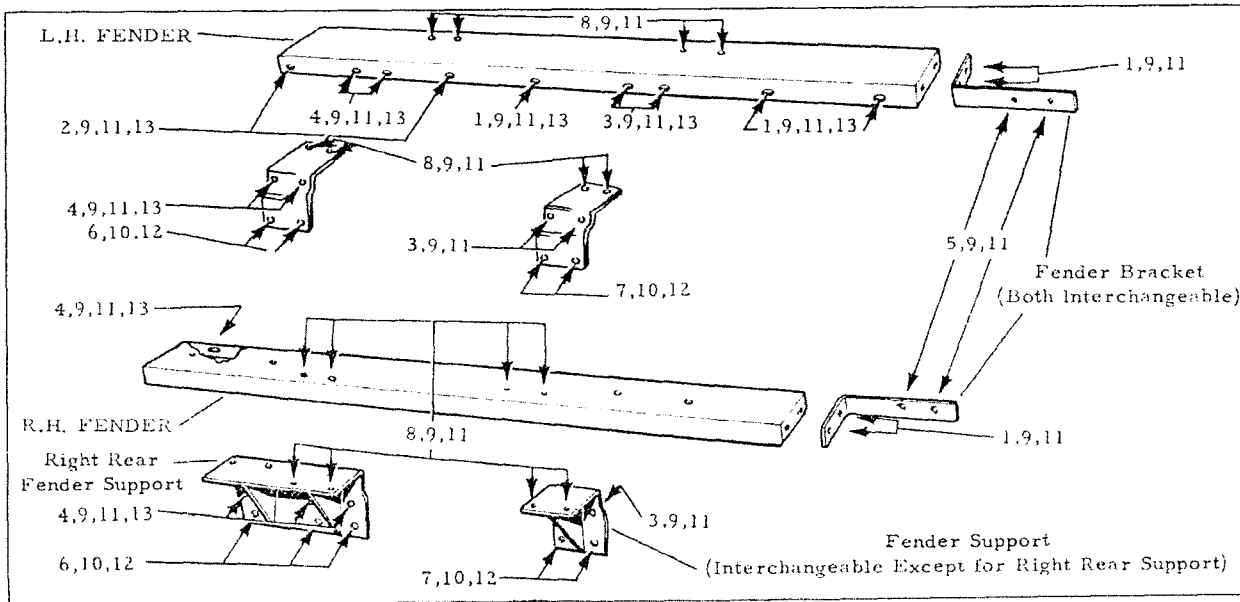
| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9-316 | Front bumper - - - - - | 1 |
| 9-317 | Front bumper capscrew - - - - - | 6 |
| 9-318 | Radiator guard - - - - - | 1 |
| 9-319 | Radiator guard capscrew - - - - - | 4 |
| 9-320 | Radiator guard brace - - - - - | 2 |
| 9-321 | Radiator guard brace lower capscrew - - - - - | 4 |
| 9-322 | Radiator guard brace upper capscrew - - - - - | 4 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|-------------------------------|-------------|
| 1 | Lockwasher, 5/8-in. - - - - - | 10 |
| 2 | Hex nut, 5/8-in. NC - - - - - | 10 |
| 3 | Lockwasher, 1/2-in. - - - - - | 8 |
| 4 | Hex nut, 1/2-in. NC - - - - - | 8 |



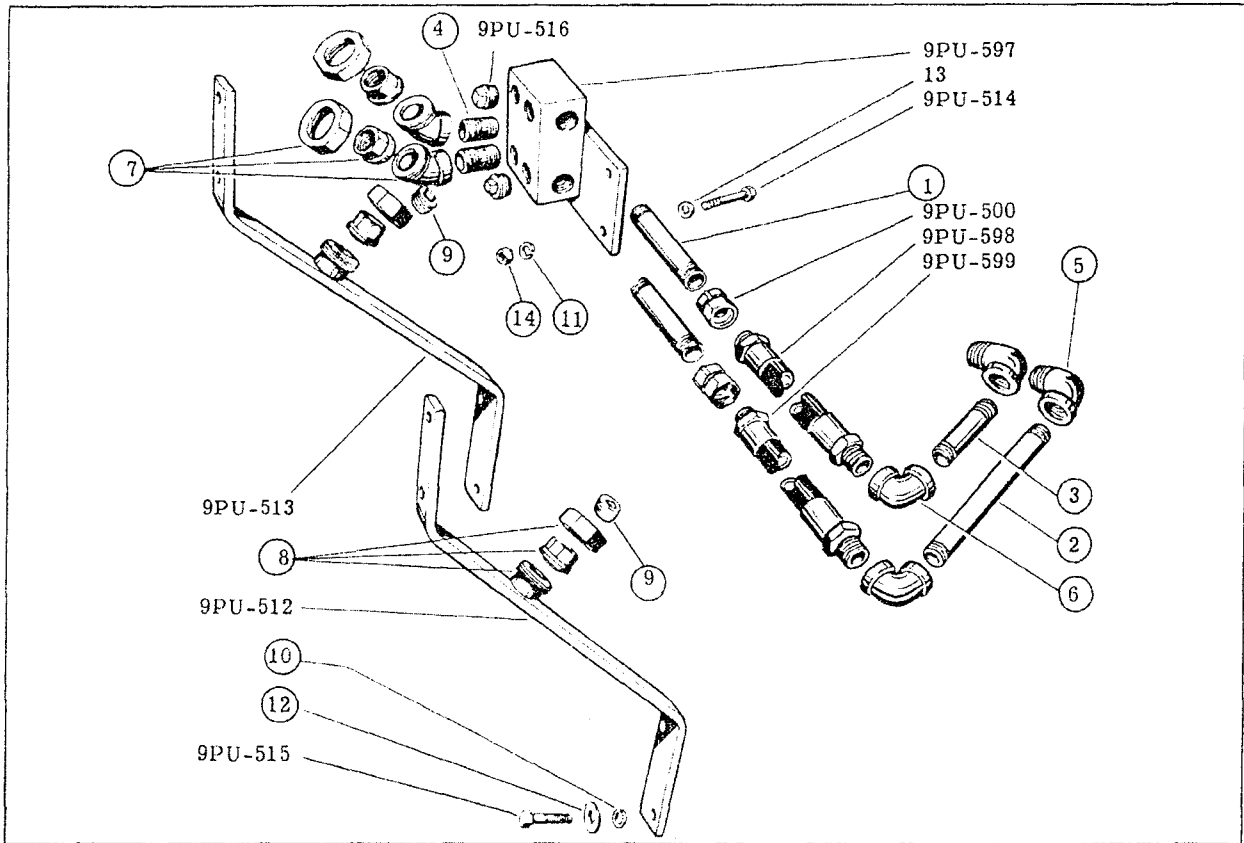
FENDERS



MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 1 | High strength capscrew, 3/8NF x 7/8-in. - - - - - | 10 |
| 2 | High strength capscrew, 3/8NF x 1-in. - - - - - | 3 |
| 3 | High strength capscrew, 3/8NF x 1-1/4-in. - - - - - | 4 |
| 4 | High strength capscrew, 3/8NF x 1-1/2-in. - - - - - | 5 |
| 5 | Flat hd capscrew, 3/8NF x 1-in. - - - - - | 4 |
| 6 | High strength capscrew, 1/2NF x 1-in. - - - - - | 5 |

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 7 | High strength capscrew, 1/2NF x 1-1/4-in. - - - - - | 4 |
| 8 | Phillips truss hd machine screw, 3/8NF x 1-in. - - - - - | 8 |
| 9 | Hex nut, 3/8-in. NF - - - - - | 34 |
| 10 | Hex nut, 1/2-in. NF - - - - - | 9 |
| 11 | Lockwasher, 3/8-in. - - - - - | 34 |
| 12 | Lockwasher, 1/2-in. - - - - - | 9 |
| 13 | Cut washer, 3/8-in. - - - - - | 14 |

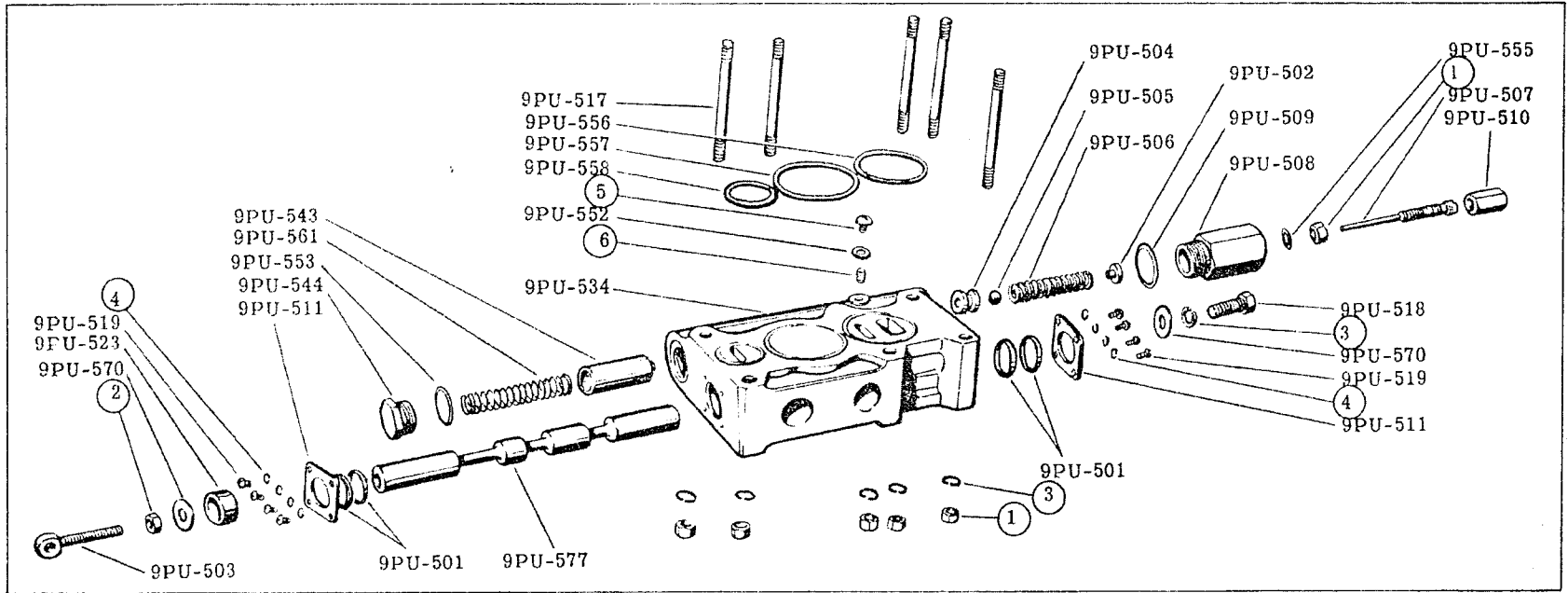


PIPING - DUAL CONTROL VALVE

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU-500 | Pressure line hose swivel - - - - - | 2 |
| 9PU-512 | Manifold bracket - right hand - - - - - | 1 |
| 9PU-513 | Manifold bracket - left hand - - - - - | 1 |
| 9PU-514 | Upper manifold bracket bolt with cutwasher and lockwasher - - - - - | 4 |
| 9PU-515 | Lower manifold bracket capscrew with lockwasher - - - - - | 4 |
| 9PU-516 | Square head pipe plug - - - - - | 2 |
| 9PU-597 | Manifold - complete - - - - - | 1 |
| 9PU-598 | Pressure line hose - manifold - - - - - | 1 |
| 9PU-599 | Pressure line hose - manifold - - - - - | 1 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|--|-------------|
| 1 | Nipple, std, 1 x 7-in. - - - - - | 2 |
| 2 | Nipple, std, 1 x 10-in. - - - - - | 1 |
| 3 | Nipple, std, 1 x 6-in. - - - - - | 1 |
| 4 | Nipple, std extra heavy, 1 x 2-in. - - - - - | 2 |
| 5 | Banded street ell, 90° x 1-in. - - - - - | 2 |
| 6 | Banded elbow, 90° x 1-in. - - - - - | 2 |
| 7 | A.A.R. elbow female union, 45° x 1-in. - - - - - | 2 |
| 8 | A.A.R. female union, 1-in. - - - - - | 2 |
| 9 | Pipe plug, ctsk, 1-in. - - - - - | 2 |
| 10 | Lockwasher, 5/8-in. - - - - - | 4 |
| 11 | Lockwasher, 1/2-in. - - - - - | 4 |
| 12 | Cut washer, 5/8-in. - - - - - | 4 |
| 13 | Cutwasher, 1/2-in. - - - - - | 4 |
| 14 | Hex nut, 1/2-in. NC - - - - - | 4 |



DUAL CONTROL VALVE SECTION

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU-501 | Plunger oil seal - - - - - | 4 |
| 9PU-502 | Load control valve spring seat | 1 |
| 9PU-503 | Plunger eye - - - - - | 1 |
| 9PU-504 | Load control valve ball seat | 1 |
| 9PU-505 | Load control valve ball - - | 1 |
| 9PU-506 | Load control valve spring | 1 |
| 9PU-507 | Adjusting screw with nut | 1 |
| 9PU-508 | Load control valve adjusting screw cap - - - - - | 1 |
| 9PU-509 | Load control valve adjusting screw cap gasket - - - - | 1 |
| 9PU-510 | Load control valve adjusting screw acorn nut - - - - | 1 |
| 9PU-511 | Oil seal retainer plate - - | 2 |
| 9PU-517 | Stud with nut and lockwasher | 5 |
| 9PU-518 | Operating plunger capscrew with lockwasher - - - - - | 1 |

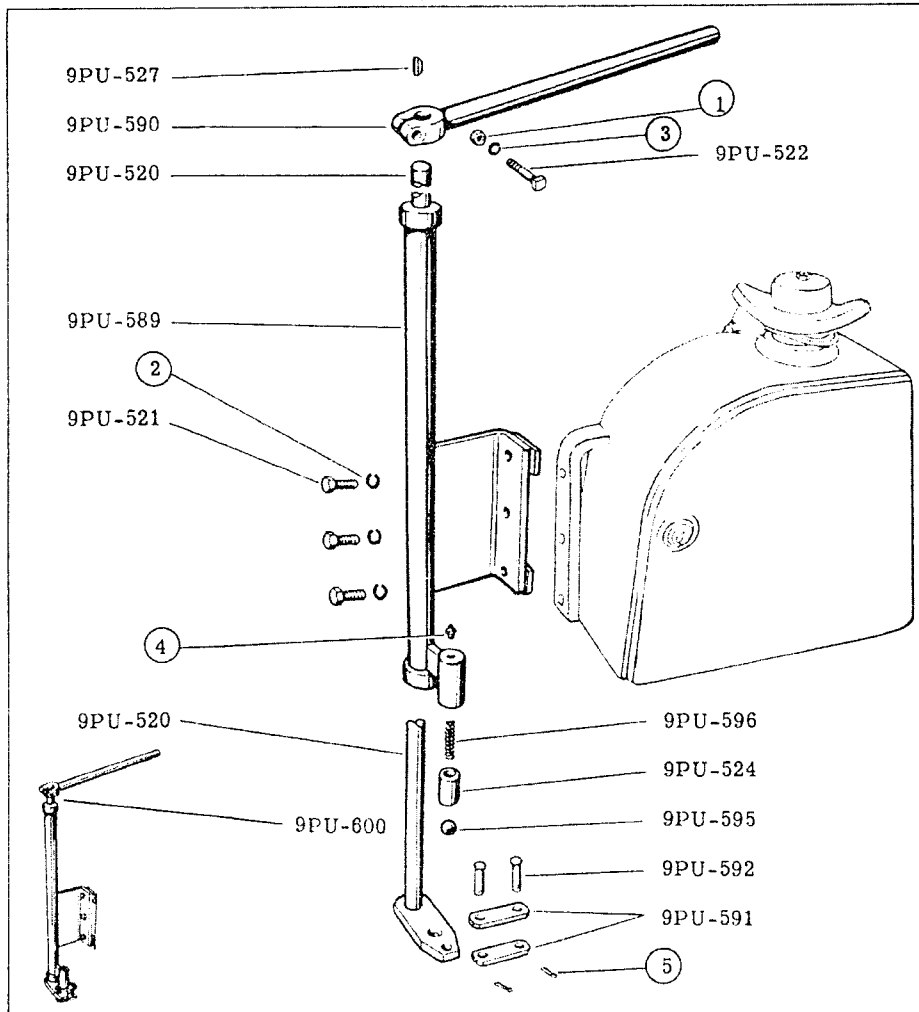
| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU-519 | Retainer plate round head machine screw with lockwasher - - - - - | 8 |
| 9PU-523 | Operating plunger spacer - | 1 |
| 9PU-534 | Dual valve section assembly (center section) - - - - - | 1 |
| 9PU-543 | Check valve plunger - - - - | 1 |
| 9PU-544 | Check valve cap - - - - - | 1 |
| 9PU-552 | Load control valve set screw gasket - - - - - | 1 |
| 9PU-553 | Check valve gasket - - - - | 1 |
| 9PU-555 | Load control valve gasket - | 1 |
| 9PU-556 | Housing ring gasket - - - - | 1 |
| 9PU-557 | Housing ring gasket - - - - | 1 |
| 9PU-558 | Housing ring gasket - - - - | 1 |
| 9PU-561 | Check valve spring - - - - | 1 |

| Ref. No. | Part Name | Qty. Req'd. |
|----------|------------------------------|-------------|
| 9PU-570 | Operating plunger washer | 2 |
| 9PU-577 | *Operating plunger - - - - - | 1 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 1 | Full nut, 1/2-in. NF - - - - - | 6 |
| 2 | Jam nut, 1/2-in. NF - - - - - | 1 |
| 3 | Lockwasher, 1/2-in. - - - - - | 6 |
| 4 | Lockwasher, 1/4-in. - - - - - | 8 |
| 5 | Machine screw, rd hd, 3/8 NC x 3/8-in. - - - - - | 1 |
| 6 | Setscrew, hollow hd, cup pt, 3/8 NC x 1/2-in. - - - - - | 1 |

*Note: When ordering operating plunger, specify whether plunger is to be .005" or .010" oversize.

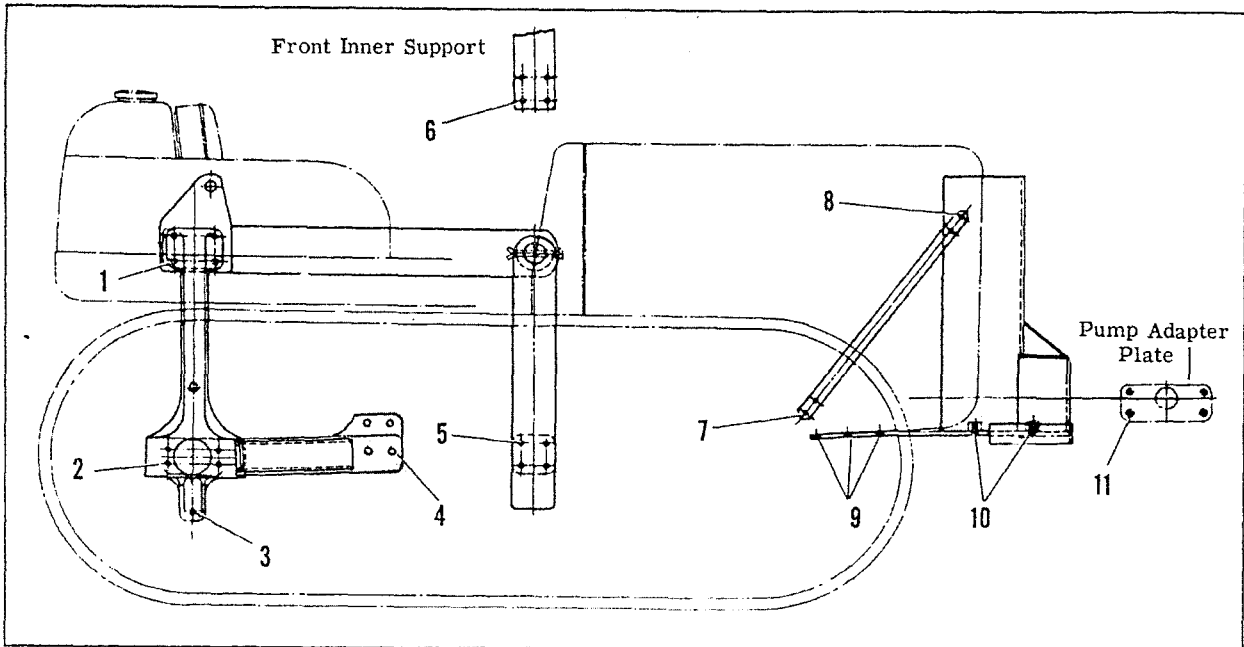


DUAL CONTROL LEVER

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 9PU-520 | Shaft and lever - - - - - | 1 |
| 9PU-521 | Lever bracket capscrew and lockwasher - - - - - | 3 |
| 9PU-522 | Hand lever bolt - - - - - | 1 |
| 9PU-524 | Ball follower - - - - - | 1 |
| 9PU-527 | Lever handle key - - - - - | 1 |
| 9PU-589 | Rear control bracket and pipe - - - - - | 1 |
| 9PU-590 | Rear control lever handle - - - - - | 1 |
| 9PU-591 | Rear control lever link - - - - - | 2 |
| 9PU-592 | Rear control lever link pins - - - - - | 2 |
| 9PU-595 | Rear control poppet ball - - - - - | 1 |
| 9PU-596 | Rear control poppet spring - - - - - | 1 |
| 9PU-600 | Dual control lever assembly - - - - - | 1 |

○ MISCELLANEOUS PARTS

| Ref. No. | Part Name | Qty. Req'd. |
|----------|---|-------------|
| 1 | Hex nut, 3/8-in. - - - - - | 1 |
| 2 | Lockwasher, 1/2-in. - - - - - | 3 |
| 3 | Lockwasher, 3/8-in. - - - - - | 1 |
| 4 | Grease fitting, straight hydraulic Alemite #1610, 1/8-in. - - - - - | 1 |
| 5 | Split pin, 1/8 x 7/8-in. - - - - - | 2 |



BOLT CHART

| Ref. No. | Description | Qty. Req'd. |
|----------|---|-------------|
| 1 | Cylinder cradle cap screw (9-9) with 3/4NF hex nut and 3/4-in. lockwasher - - - - - | 8 |
| 2 | Cylinder cradle rear outer support cap screw, rear (9-34) with 5/8-in. lockwasher - - - - - | 8 |
| 3 | Cylinder cradle rear outer support cap screw, lower (9-35) with 5/8NF hex nut, 9-36 shim and 5/8-in. lockwasher - - - - - | 2 |
| 4 | Cylinder cradle rear outer support cap screw, front (9-33) with 3/4-in. lockwasher - - - - - | 8 |
| 5 | Cylinder cradle front outer support stud (9-15) with hex nut (9-15A) - - - - - | 8 |
| 6 | Cylinder cradle front inner support stud (9-24) with hex nut (9-24A) - wide gage - - - - - | 8 |
| | cap screw (9-24) with lock plate (9-24B) - standard - - - - - | 8 |
| 7 | Radiator guard brace lower cap screw (9-321) with 1/2NC hex nut and 1/2-in. lockwasher - - - - - | 4 |
| 8 | Radiator guard brace upper cap screw (9-322) with 1/2NC hex nut and 1/2-in. lockwasher - - - - - | 4 |
| 9 | Front bumper cap screw (9-317) with 5/8NC hex nut and 5/8-in. lockwasher - - - - - | 6 |
| 10 | Radiator guard cap screw (9-319) with 5/8NC hex nut and 5/8-in. lockwasher - - - - - | 4 |
| 11 | Pump cap screw (9PU-182) with 3/4-in. lockwasher - - - - - | 4 |