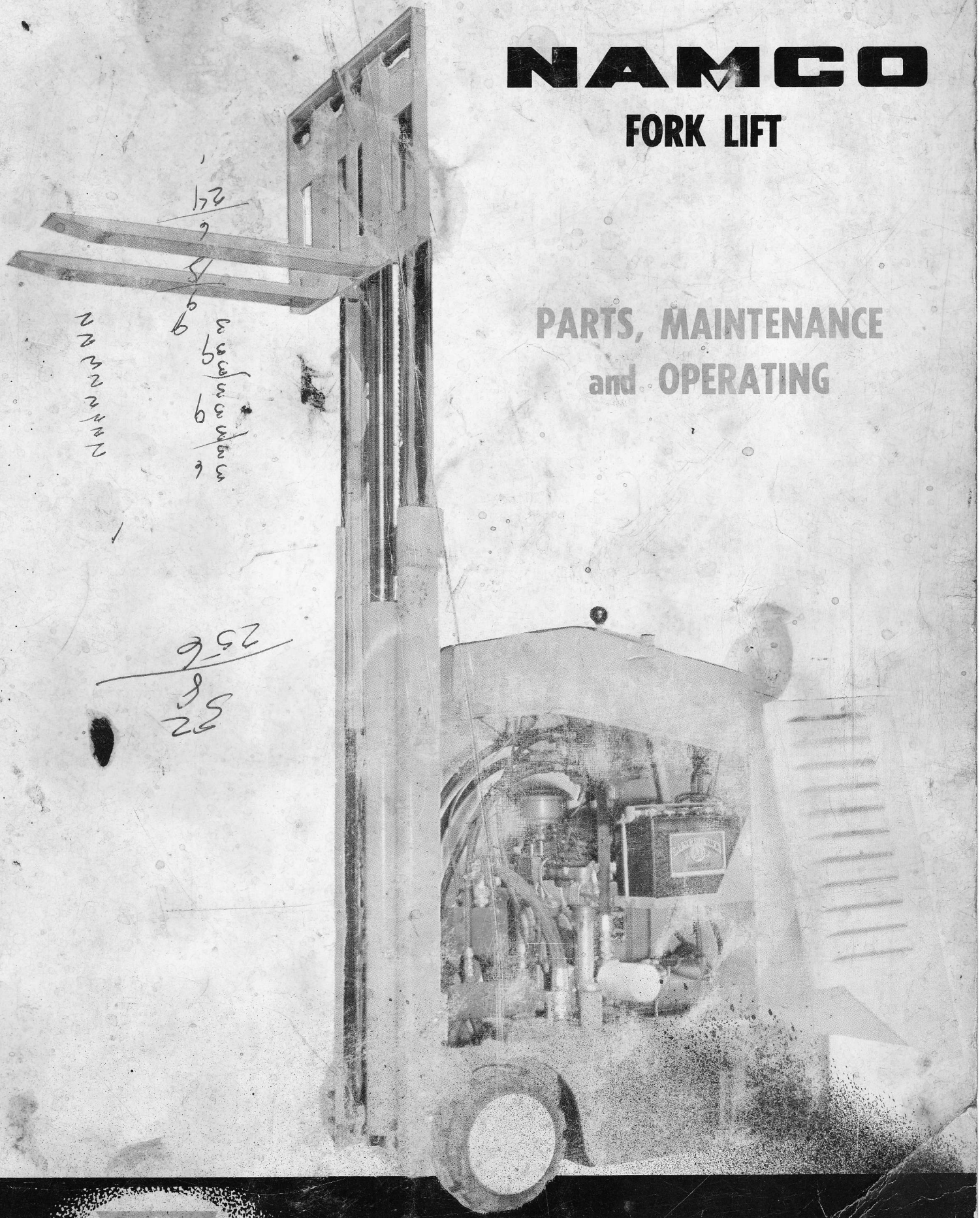
NAMCO

FORK LIFT

PARTS, MAINTENANCE and OPERATING



North American
MANUFACTURING COMPANY
SIOUX CITY, IOWA U.S.A.

NAMCO WARRANTY

NAM Co. warrants each product of its manufacture to be free from defective material and workmanship if the product is operated and serviced according to the manufacturer's instruction manual.

This warranty is in effect for 90 days from date of purchase or for 300 operating hours as indicated on the engine hour meter, whichever shall come first.

NAM Co. obligation under this warranty is limited to repair or replacement of parts ONLY which have been returned to the NAM Co. factory freight prepaid, and after inspection, are deemed by NAM Co. to be defective. The warranty obligation is in no way to be construed to include labor or other miscellaneous costs or loss or damages incurred directly or indirectly from the use of the NAM Co. products.

This warranty shall not apply to component parts which are warranted separately by their respective manufacturers.

Neither shall this warranty apply to any parts or components which are expendable and are expected to wear out in normal service during the course of this warranty.

This warranty supersedes all other warranties, expressed or implied, and no person, agent or dealer is authorized to give any other warranties on behalf of the manufacturer.

74087

Tear Here

IMPORTANT:

DEALER COMPLETE AND RETURN THIS CARD IMMEDIATELY—OR GUARANTEE IS VOID.

MODEL 74087

Serial Number

Purchased from _____ Purchase Date _____

Address _____

Your Name _____

Address _____

MANUFACTURER'S WARRANTY

The Manufacturer warrants, to the original user, that each product of its manufacture is free from defects in material and factory workmanship if properly installed, serviced and operated under normal conditions according to the Manufacturer's instructions.

Manufacturer's obligation under this warranty is limited to correcting without charge at its factory any part or parts thereof which shall be returned to its factory or one of its Authorized Service Stations, transportation charges prepaid, within one year after being put into service by the original user, and which upon examination shall disclose to the Manufacturer's satisfaction to have been originally defective. Correction of such defects by repair to, or supplying of replacements for defective parts, shall constitute fulfillment of all obligations to original user.

This warranty shall not apply to any of the Manufacturer's products which must be replaced because of normal wear, which have been subject to misuse, negligence or accident or which shall have been repaired or altered outside of the Manufacturer's factory unless authorized by the Manufacturer.

Manufacturer shall not be liable for loss, damage or expense directly or indirectly from the use of its product or from any other cause.

The above warranty supersedes and is in lieu of all other warranties, expressed or implied, and of all other liabilities or obligations on part of Manufacturer. No person, agent or dealer is authorized to give any warranties on behalf of the Manufacturer nor to assume for the Manufacturer any other liability in connection with any of its products unless made in writing and signed by an officer of the Manufacturer.

ENGINE/GENERATOR DIVISION
ONAN Studebaker CORPORATION

2515 UNIVERSITY AVENUE S.E. · MINNEAPOLIS, MINNESOTA 55414
IN CANADA: ONAN GENERATORS CANADA LTD., P.O. BOX 652, GUELPH, ONTARIO

Onan

74087

74087

REGISTRATION CARD

To Be Removed Only By Purchaser

MODEL NO.	SPEC. NO.	SERIAL NO.
		97C990892

COPY ABOVE NUMBERS FROM METAL NAME PLATE ON GENERATOR OR ON ENGINE (IF ENGINE ONLY).

Used As: ☐ Standby Power ☐ Portable Power ☐ Primary Power

For _____

Date Purchased _____ Date Installed _____

Dealer Purchased From _____

City _____ State _____

Owner's Name _____

Street _____

City _____ State _____

ON RECEIPT OF THIS CARD, SEND OWNER ITEM NO. _____

KEEP
THIS

GUARANTEE

and return attached card to:

NORTH AMERICAN MFG. CO.
P. O. Box 1917
Sioux City, Iowa

PLACE
STAMP
HERE

NORTH AMERICAN MFG. CO.
P. O. Box 1917
Sioux City, Iowa
U. S. A.

SPECIAL NOTICE TO PURCHASER

It is extremely important for you to fill out, detach and return th registration card.

It registers your Onan unit on our records and entitles you to receive full factory service privileges. It also insures prompt handling of any of your correspondence.

SAVE THE WARRANTY CARD

Prompt return of your registration card entitles you to one of these free gifts. Show the number of the item you want on the registratio card.

1. The book Wiring Simplified—a compact instruction manual on the various known and accepted wiring systems.
2. A pocket-type Neon Light Tester—for AC or DC. Used to indica whether or not voltage is available.
3. A "Ritepoint" Ball Point Pen. Uses standard length cartridge.

Fill in the information below for your own record. Be sure to u these numbers whenever writing about your unit.

MODEL NO. | SPEC. NO. | SERIAL NO.

PURCHASED FROM

DATE

23H000

Postage Will Be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY MAIL
First Class Permit No. 281, SEC. 34.9, P. L. & R., Minneapolis, Minn.

POSTAGE WILL BE PAID BY

ONAN DIVISION of STUDEBAKER CORPORATION,

2515 UNIVERSITY AVENUE S.E.

MINNEAPOLIS, MINN. 55414

SERVICE DEPARTMENT

NAMCO MOTOR; MODEL AND SPECIFICATION NUMBER CCK-MSV/1475 lb SERIAL # 97-C990894

Operating & Maintenance

1500# MOD 2015 S/N 51057

Do not attempt to overhaul valves or drive motors in your plant. Send these components to authorized dealer for repair or exchange them for rebuilt units.

The lift cylinder has a vee packing which may be tightened to stop any leakage. There is a brass spanner nut at the top of the cylinder which forces the packing tighter around the ram. Use only enough pressure to stop leaks. Undue tightening will cause excessive wear on the ram. Change hydraulic oil every 3,000 hours or annually, whichever comes first.

LUBRICATION

The steering shaft his two U-joints and two bushing housings which should be greased every 100 hours. At the same intervals grease the mast channels and lift sprockets. In very dirty conditions grease oftener for best results. Any good chassis grease may be used.

Drive wheel and rear wheel bearings should be repacked every 3,000 hours or annually, which ever comes first.

For engine service please refer to page 30 of the Onan Instruction Manual for periodic maintenance.

GENERAL

Play in Steering. Remove the cover plate on rear step. Loosen 3 bolts holding clamping flange down on adjustment sleeve. Turn adjustment sleeve until pinion bottoms out. Back up slightly to provide clearance and retighten bolts.

Side Play in Mast. Mast hold downs are drilled off center to provide an eccentric. Loosen bolt in motor component. Turn hold down until it stops, then tighten bolts.

Basket or Fork Level. Two adjustment bolts on end of chain can either be tightened or loosened until the basket sets level.

Two Speed Valve Linkage. The shift rod must be shortened when the fork lift does not go into low gear. This could be a result of the shift rod stretching or wear on the clevis pin.

Onan Engine Service and Parts. Points, plugs, and condenser may be obtained from NAMCO. For repair and all other parts, contact nearest Onan Sales and Service Dealer.

NOTE: FOR FOUNDRY OPERATION. All lubrication and Hydraulic instructions should be followed **twice** as often as normal conditions.

HYDRAULIC SYSTEM

Hydraulic oil systems must be kept clean for effective service life. Most ineffecient systems are the direct result of dirt and other foreign elements. The hydraulic oil filter should be changed after the first 50 hours of operation. Filter changes should be maintained every 250 hours for maximum life.

A daily check should be made to see that the hydraulic reservoir is completely full of oil. Cavitation or inefficiency will result from a low reservoir.

There are four adjustable relief valves in the main control valve. The main relief is located at the top right side. It should open at 1250 psi.

CAUTION: DAMAGE TO THE SYSTEM WILL RESULT IF ABNORMALLY HIGH PRESSURES ARE USED.

To adjust the main relief, remove cover screw and use a small screw driver. Turn adjustment screw clockwise to increase pressure. This should only be performed when the fork lift has lost power and the engine is **running correctly.**

Cylinder port reliefs are located near the outlet ports. There is one for the lift mechanism and two for the tilt. These reliefs should be adjusted only if it will not pick up the **rated load.**

CAUTION: IF CYLINDER PORT RELIEFS ARE SET TOO HIGH, AN UNSAFE FORK LIFT MAY RESULT IN OPERATOR INJURY.

All Hydraulic hoses on this unit have reusable couplings. Remove the hose from the truck by unscrewing the coupling from the adapter. Do not remove the adapter from its component, i.e. pump, motor, valve, etc., unless the component is being replaced. The coupling is made in two pieces which are screwed together clamping the hose in position. To remove the coupling from the hose, simply unscrew the two coupling pieces.

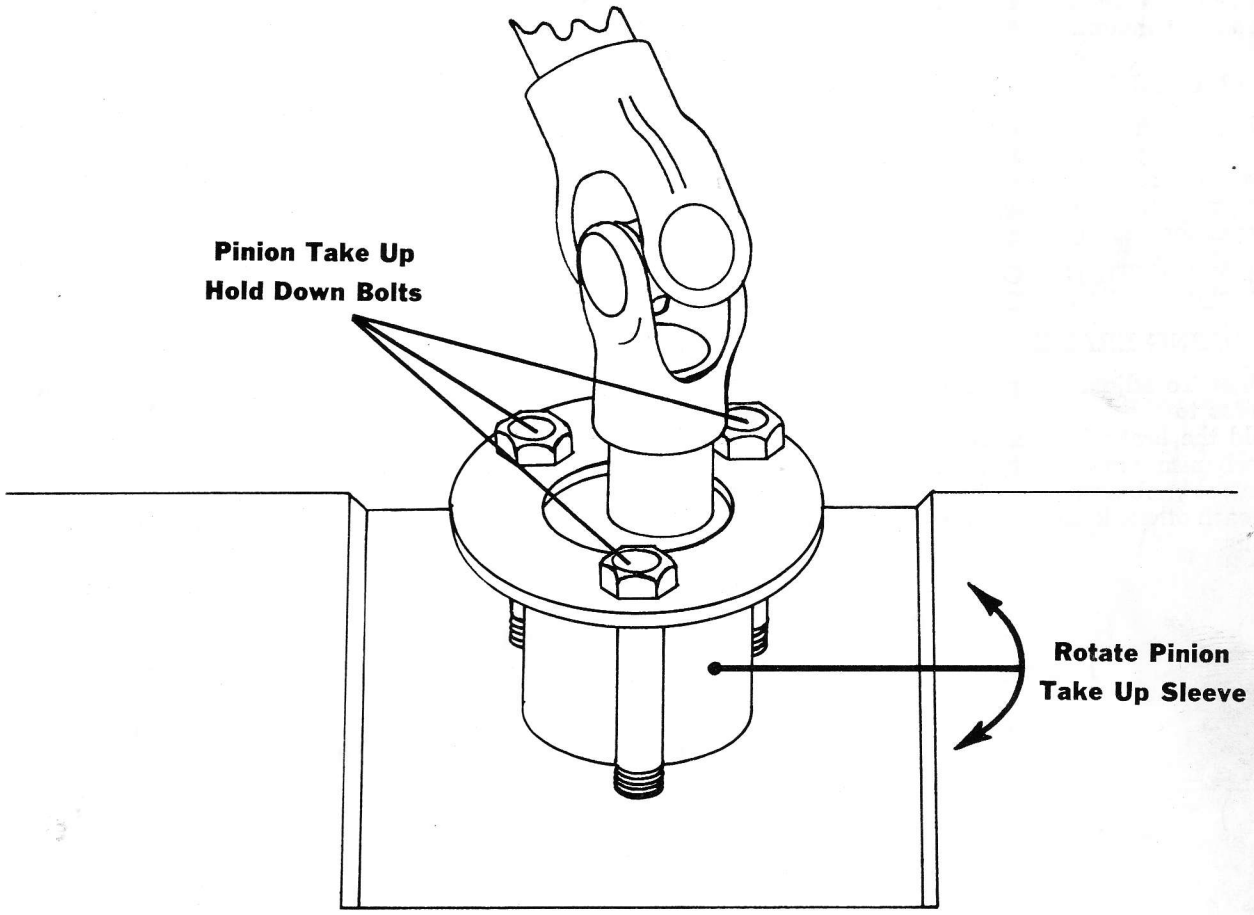
Reassembling is done in the following manner. First, screw the outer piece on the hose until it stops, then back up ¼ turn. Put a small amount of 90 weight grease on the tapered inner piece and screw the two pieces together. Blow out the hose assembly so no dirt will be introduced into the system.

CAUTION: EXERCISE CARE TO KEEP ALL DIRT OUT. COVER ALL OPEN CONNECTIONS DURING REPAIR. WIPE CONNECTIONS CLEAN BEFORE REASSEMBLY.

The right and left sides of the Fork Lift Truck, as referred to in the text of the service manual, will be viewed while standing on the machine in the operating position. The steering tiller handle is on the left side and hydraulic control handles are on the right side.

STEERING PINION ADJUSTMENT:

1.0 The steering pinion is located on the rear platform underneath the hinged cover. Loosen the three pinion take up hold down bolts. Rotate pinion take up sleeve until the pinion and the steering gears are in mesh and not touching tooth crowns. The steering tiller should be in the forward position when the rear wheel is in a straight forward running position. Back off pinion take up sleeve slightly to get smooth turning action from lock to lock. Tighten the three hold down bolts.



FUEL FILTER

1.1 The fuel filter is a replacement type located to the left of the hydraulic pump mount. Remove nuts or clamps, whichever applies to your lift truck, to remove filter cartridge. Replace with new element every 3000 hours or annually. Use AC. No. GF-11-4.

ONAN ENGINE

1.2 Adjustments for the Onan Engine; i.e., plug gap, point gap, timing etc., can be found in the Onan Operators Manual or Onan Service Manual for the Model CCK Engine.

1.3 To remove the engine from the lift truck for major work, use the following procedure. Remove clips holding the throttle and choke cables and disconnect wire ends. Remove starter cable from terminal at the starter. CAUTION: DISCONNECT COIL WIRE, BATTERY GROUND CABLE, AND GENERATOR WIRES, MARKING EACH ONE FOR REASSEMBLY. Disconnect the fuel line at the fuel filter inlet located to the left of the carburetor. Remove the two speed valve linkage. Unscrew the two bolts at each end of the muffler manifold and remove the manifold. Loosen lower exhaust hose clamp and remove muffler manifold and hose as a unit. Remove the four bolts holding the pump mount to the engine. Loosen the set screw on the engine side of the chain coupler and remove the pump mount assembly from the engine. Remove the three bolts holding the engine to the chassis. Two bolts are located below the starter and one bolt by the front left corner. Pull the right side of the engine forward so the air duct will clear the frame. Lift engine up and remove out the right side.

1.4 To install the engine use the reverse procedure outlined in Paragraph 1.3.

1.5 Throttle settings should be made at the end of the cable which hooks to the governor spring. This spring should have no tension when the engine is not running. The throttle wire should move approximately 1/16" before the spring starts to have tension. This setting will run the engine at 2400 rpm when the throttle is open.

CAUTION: DO NOT RUN ENGINE ABOVE 2400 RPM AS IT WILL DAMAGE THE HYDRAULIC PUMP.

1.6 Insert choke wire into the arm at the carburetor. Make sure choke button on hood is pushed in and move choke cable at the carburetor until butterfly valve is wide open. Hold in that position and replace clip on choke mount.

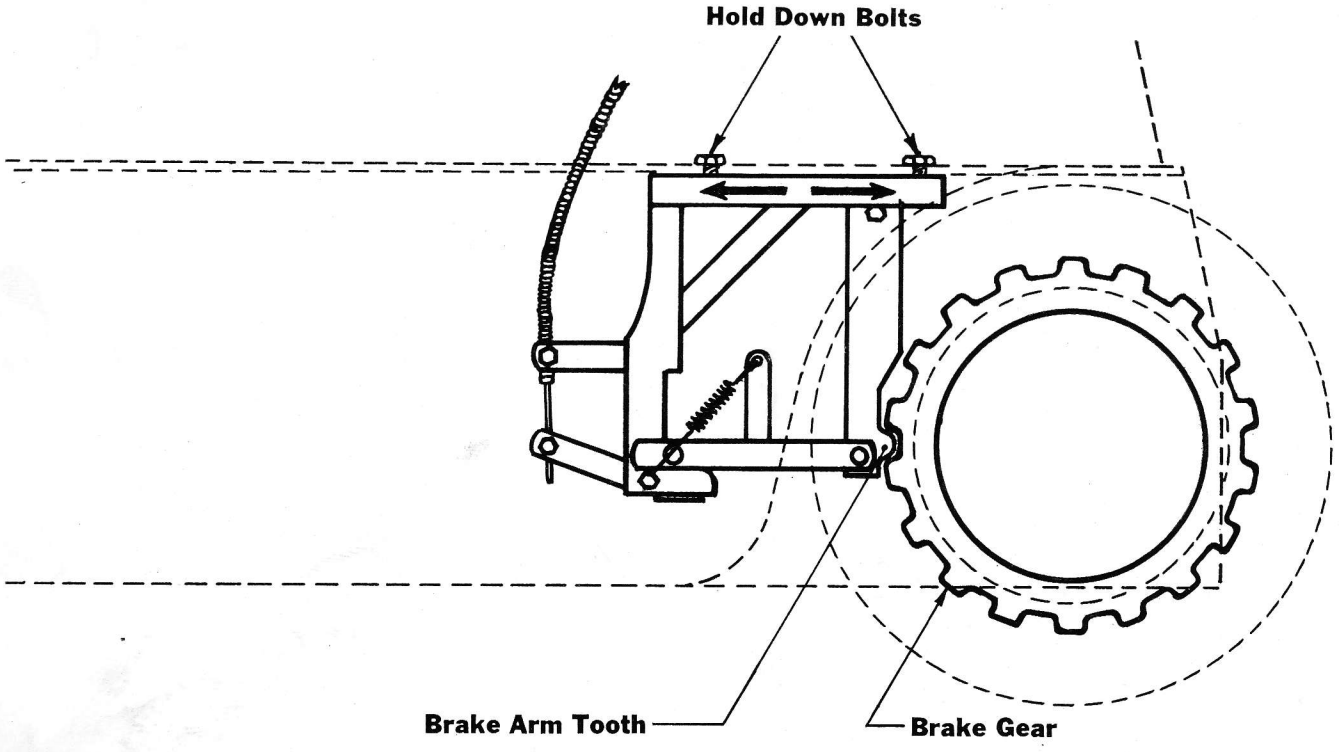
LIFT CHAIN

1.7 Each of the two lift chains may be loosened or tightened separately. This is done because one chain may stretch more than the other after a number of working hours. Each chain has an adjustment bolt located at the end which may be tightened or loosened until the carriage sets level and both chains are carrying equal weight. Run the carriage to the top with the mast in a vertical position. There should be approximately ½" between the carriage support bars and the inner mast.

1.8 CAUTION: NO CLEARANCE BETWEEN THE INNER MAST AND THE CARRIAGE WILL PUT UNDUE PRESSURES ON THE LIFT CHAINS CAUSING THEM TO BREAK.

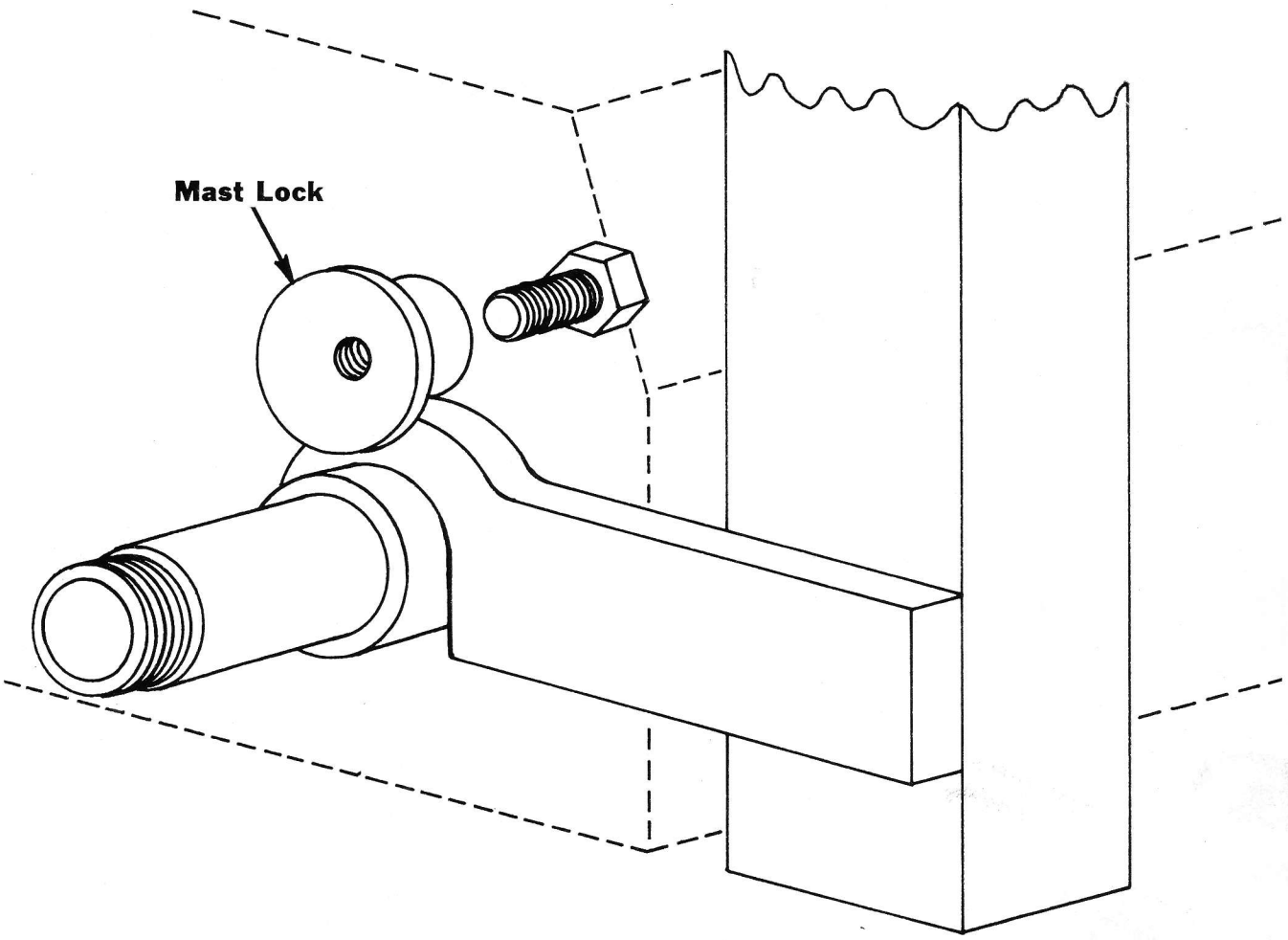
PARKING BRAKE

1.9 To adjust the parking brake, the fork truck should be blocked up on the right side. This gives easy access to the brake mechanism located underneath the right fender. Loosen the two hold down bolts which hold the brake in position. Pull the control knob, on the hood top, to the engaged position. Slide the brake mechanism assembly toward the wheel until the pawl firmly engages the gear. Snug the holding bolts and push control knob down to disengage the brake. Turn the wheel by hand to make sure the pawl and gear are clear of each other. If any binding occurs, tap brake mechanism slightly to the rear until free. Tighten hold down bolts.



MAST LOCKS

1.10 The mast is held in position by a mast lock on each side of the truck. These locks should be checked periodically to make sure they have not loosened. The mast will have sideways movement if they are loose.



1.11 The mast lock bolt is located inside the drive motor compartment just above each drive motor mount. Loosen each bolt. Make sure the mast is seating properly on axle housing and tighten the bolt letting the mast mounting plate hold the eccentric lock from turning. This method of tightening insures the mast lock from loosening due to pressure from the mast.

DRIVE AXLES

1.12 The drive axle is full floating. It is a hardened steel sleeve splined at both ends to mate with the splines on the hydraulic drive motors and drive plates. Removal of the six bolts holding the drive plate to the wheel allows the axle plate to be disassembled. The drive axle, now exposed, may be taken out. Check all splines to see if they are in good condition. Replace badly worn drive axles. Apply a small amount of wheel bearing grease to the splines when reassembling.

1.13 CAUTION: CHECK DRIVE AXLES AND DRIVE PLATES IF YOUR FORK LIFT DOES NOT OPERATE IN LOW RANGE, BUT DOES OPERATE IN HIGH RANGE. EXCESSIVE DAMAGE MAY RESULT WHEN TRUCK IS OPERATING ON ONE DRIVE MOTOR.

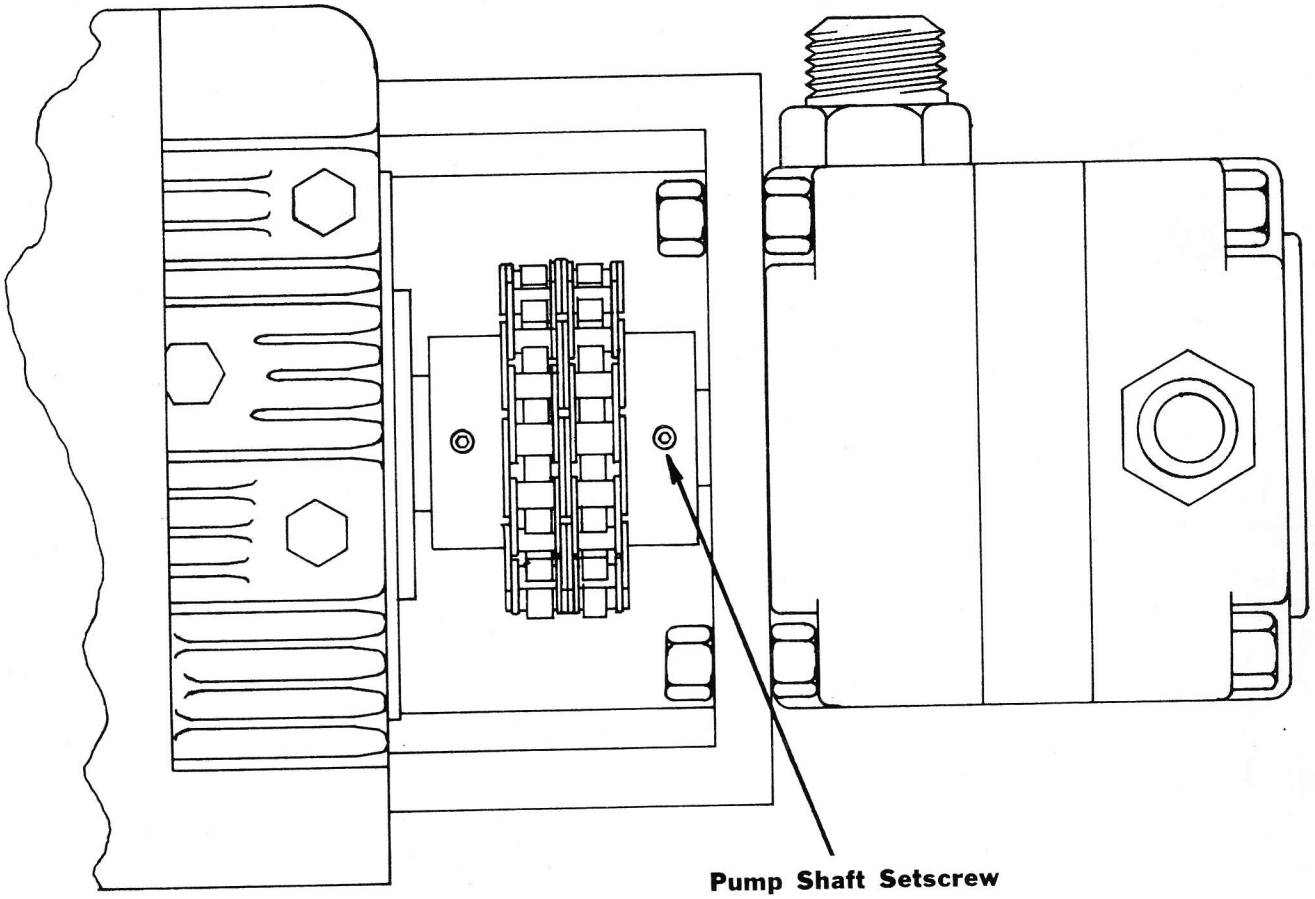
1.14 Excessive axle wear may be caused by the motor relief valve being set too high. This relief should be set at 1250 psi maximum. Refer to hydraulics section, paragraph 2.24 for detailed pressure setting instructions.

HYDRAULIC SECTION

2.1 CAUTION: EXERCISE CARE, WHEN WORKING ON THE HYDRAULIC SYSTEM, TO KEEP ALL DIRT OUT. RECOMMENDED PRACTICE IS TO STEAM CLEAN THE FORK TRUCK BEFORE DISASSEMBLING ANY COMPONENTS. COVER ALL OPEN CONNECTIONS DURING REPAIR AND WIPE ALL CONNECTIONS CLEAN BEFORE REASSEMBLY.

HYDRAULIC PUMP

2.2 The servicing of the hydraulic pump should be limited to removal and replacement. It is not recommended that the owner or dealer overhaul the pump as special machines are needed to obtain the correct clearances in the gerotor mechanism.



2.3 Use a wrench to hold the adapter at the pump and remove the hose from the adapter by turning the hose swivel nut. Remove both the suction and discharge hoses from the pump connections. Loosen the set screw on the chain coupler on the pump shaft side. There are four nuts on the inside of the pump mount casting holding the pump. The pump may be removed after the nuts have been taken off. Remove the adapters from the pump housing when it is to be replaced with a new pump. Use teflon tape or permatex on the adapter threads if the pump you are using has pipe threads. Pipe thread pumps are painted red for identification. Replace "O" rings on yellow pump adapters.

2.4 CAUTION: DO NOT EXERT UNDUE FORCE WHEN PUTTING THE ADAPTERS IN AS THE PUMP HOUSING WILL CRACK. THE USE OF TEFLON TAPE ALLOWS THE ADAPTER TO GO A FULL THREAD DEEPER IF THE SAME TORQUE IS APPLIED THAT NORMALLY IS USED TO SEAT BARE PIPE THREADS.

TWO-SPEED VALVE CONTROL

2.5 The two-speed valve controls the flow of oil either series or parallel to the drive motors. Refer to Service Bulletin No. 14 for schematic diagram.

2.6 CAUTION: THE TWO-SPEED VALVE USES ONLY TWO OF THE THREE AVAILABLE POSITIONS. Use only the positions of the valve spool when it is completely out and half the way in. The travel distance will be ¼".

2.7 Stretching or bending of the shift rod or wear in the clevis pin could prevent the shifting of the two-speed valve spool to the correct location. Remove the clevis pin and loosen the clevis locknut. Turn clevis a turn or two, replace and check for proper valve positions as noted in paragraph 2.6.

SUCTION FILTER

2.8 The suction filter is mounted directly to and above the pump. Clean screen filter in solvent and blow out with an air gun. This filter should be cleaned every time the hydraulic oil is changed. The recommended time to change oil is every 3000 hours. At the base of the filter case is a drain plug which has to be removed to drain the filter case. Wash filter case with solvent and wipe dry to remove all sediment.

2.9 CAUTION: BE SURE COVER GASKET AND HOLD DOWN BOLT SEAL IS PROPERLY SEATED. AIR LEAKS ON THE SUCTION SIDE WILL CAUSE CAVITATION OF THE PUMP. CAVITATION RESULTS IN NOISY AND SLUGGISH OPERATION.

HYDRAULIC OIL FILTER

2.10 There is a ten micron oil filter in the return to hydraulic reservoir line. This filter is located on the left side of the truck and is the throw away canister type. Use a metal trough to divert the oil to the outside of the truck. The filter unscrews in a counter-clockwise direction. It should be changed after the first 50 hours of operation and every 250 hours thereafter for maximum protection of the hydraulic pump and motors.

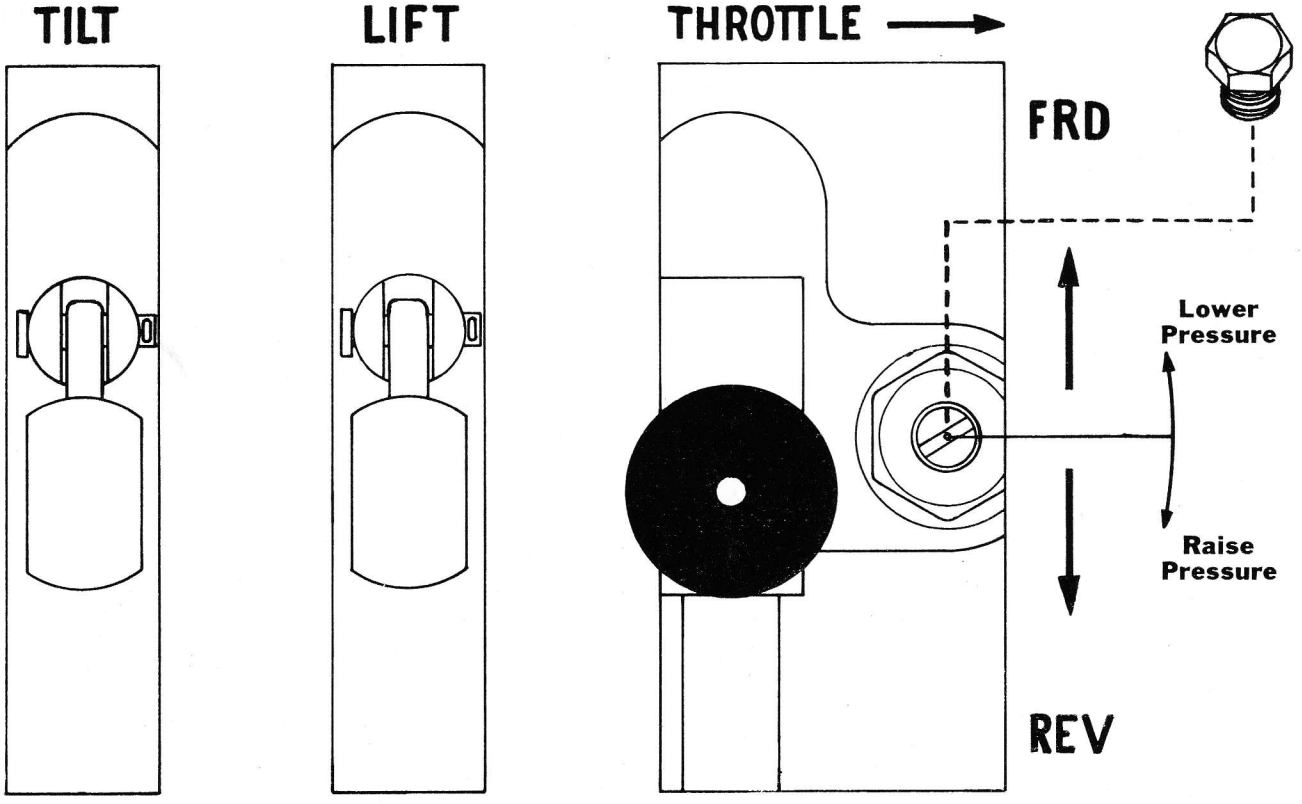
HYDRAULIC OIL

2.11 A daily check should be made to see that the reservoir is completely full of oil. Cavitation and inefficiency will result from a low oil level.

2.12 To change oil, run the right side of the truck to the edge of a loading dock or block the truck up sufficiently high to get a drain pan underneath. The hydraulic oil reservoir holds 11 gallons of oil. There is a reservoir drain located underneath the right fender toward the rear. Replace drain plug and refill with Type A automatic transmission fluid or a high grade of oxidation and rust inhibited hydraulic oil SSU grade 150 @ 100° F. Change hydraulic oil every 3000 hours.

2.13 CAUTION: DO NOT USE MOTOR OIL. EXCESS FOAMING AND HEAT WILL REDUCE THE EFFICIENCY OF THE SYSTEM.

MAIN RELIEF VALVE

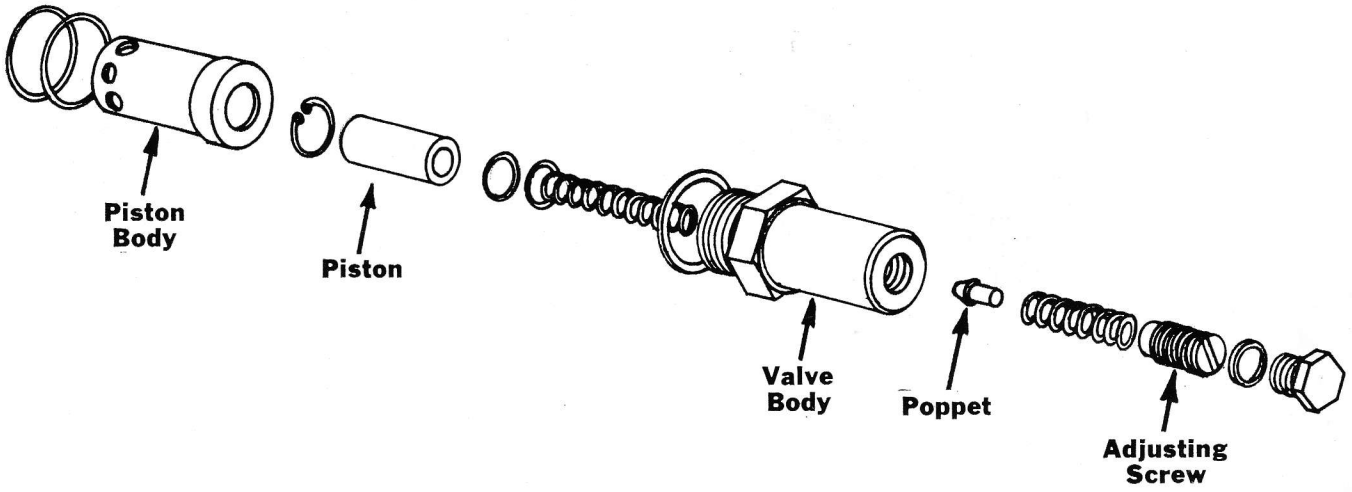


2.14 The main relief valve is located on the top of the main control valve, to the right of the right hand control lever. Access to the main relief valve is through the right hand slot. Remove top hex cap nut which is the smallest hex nut showing. Underneath the hex cap is a slotted screw. To raise the pressure turn the slotted screw clockwise. The main relief should open at 1250 psi. Insert test gauge in the front drive hose assembly. Push control lever in forward position with engine running. Test gauge will show the pressure the main relief is opening.

2.15 CAUTION: DAMAGE TO THE SYSTEM WILL RESULT IF PRESSURES HIGHER THAN 1250 PSI ARE USED.

2.16 All precautions have been taken to keep the hydraulic system clean. However, there still remains the possibility of dirt entering the system. Dirt can get into the small ports in the main relief and hold the valve in an open position. This would result in very poor performance characteristics of all functions or no operation of all functions.

2.17 The main relief valve may be removed by unscrewing the large hex nut at the main valve casting. This removes the body and valving. Clamp the large hex in a bench vise and use a screwdriver to remove the adjusting screw inside the valve body. Tip the valve body over so the spring and poppet valve fall out. Wash all pieces with solvent and air dry. Check inside the valve body and around the poppet valve for dirt and metal chips which could hold the valve open. Wipe pieces off and reassemble. Reset the pressure after installing in the fork truck.



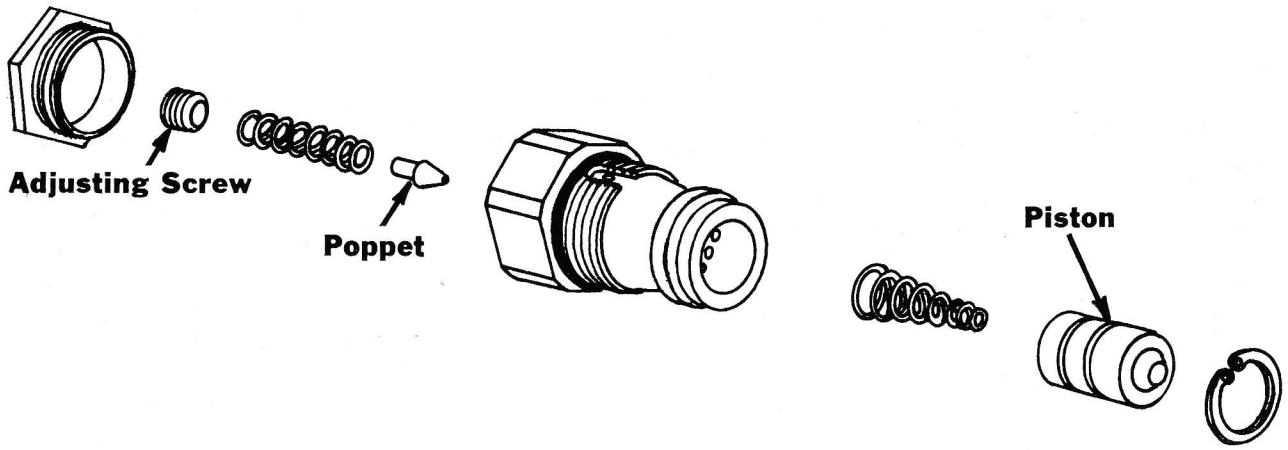
LIFT RELIEF VALVE

2.18 The lifting section of the valve is in the center section with one hose leading from it to the cylinder. Just below the hose port is the lift relief valve. Unscrew the thin hex cover nut. To set the port relief, use a 1/8" hex wrench and insert it in the center of the relief. To raise the pressure turn the screw clockwise. Replace the hex cover nut after the pressure has been set. Insert gauge in lift cylinder line to find pressure set on the lift relief valve. Lift control handle must be in the raised position with the engine running.

2.19 CAUTION: IF CYLINDER PORT RELIEF IS SET TOO HIGH, AN UNSAFE FORK LIFT TRUCK MAY RESULT IN OPERATOR INJURY.

2.20 It may be necessary to change the main relief valve to a higher pressure along with the lift relief valve when converting a model 15-15 to a 20-15 for greater capacity. The best sequence is to set the lift relief higher than necessary and set the main relief to carry the load. Reset the lift relief after the main relief is set. Lift valve settings are as follows: Model 15-15, 1100 psi; Model 20-15, 1200 psi.

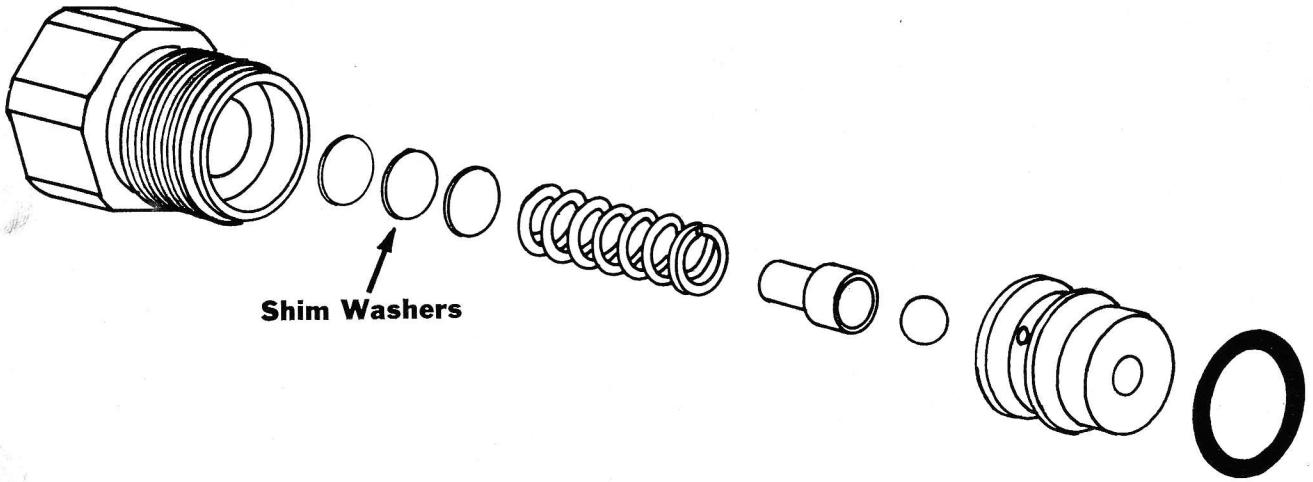
2.21 Dirty or contaminated oil can cause a varnish to form on the piston and bore of the lift relief valve. This varnish or particles of dirt renders it inoperative. Remove cylinder port relief from truck. A correct operating piston should be held in the body by a snap ring and will move freely when operated by hand. Push the piston away from the snap ring and remove the snap ring. Tapping the valve body will release the piston so it can be disassembled. Remove the adjusting screw, spring, and poppet by turning the adjusting screw counterclockwise. Wash all parts in solvent and air dry. Check inside of valve body and around the poppet valve for dirt and metal chips which could hold the valve open. Wipe pieces dry and reassemble. Reset the pressure after installing in the fork truck. (Diagram on next page)



TILT RELIEF VALVES

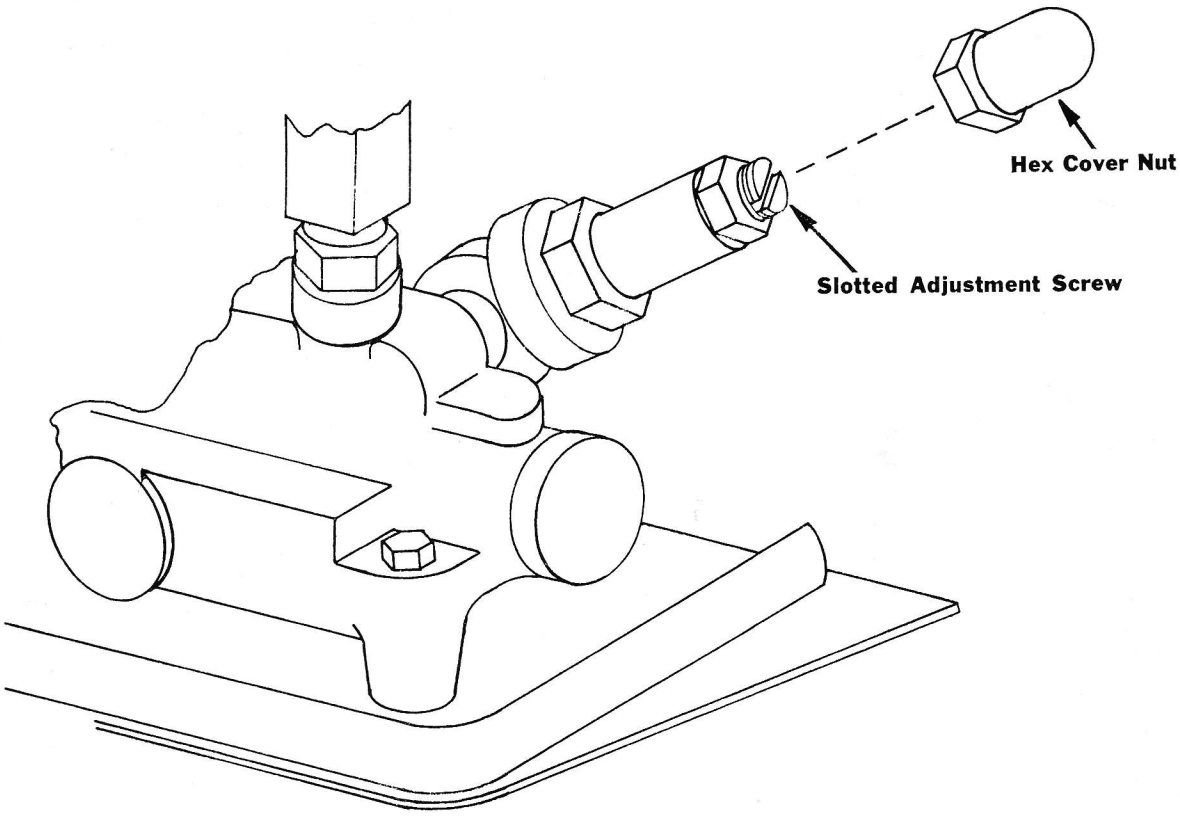
2.22 The tilt reliefs are preset to higher pressures than necessary to operate the tilt cylinder for load conditions. Its primary function is to relieve the pressures created by the restricting orifice which slows down the tilt speed. The tilt reliefs could be raised, if necessary, by the following procedure. The caps by the port outlets should be removed. A spring and poppet valve will come out as the cap is removed. Place a shim washer between the spring and the cap to raise the pressure. In the event the O-Ring seal should drop out, put some grease on the seal and replace in the valve. The grease will hold the seal from falling out during reassembly. These reliefs should open at 800 psi. Insert test gauge in top port to check the relief in the top of the valve. Use the lower port for the relief located on the underside.

2.23 CAUTION: THE TILT RELIEF WILL NOT FUNCTION PROPERLY IF THE O-RING SEAL IS NOT PROPERLY SEATED OR IF IT HAS BEEN DAMAGED SLIGHTLY.



MOTOR RELIEF VALVE

2.24 A motor relief valve is located to the left of the two speed control valve and directly connected to it. Remove the hex cover nut at the forward, top end. A slotted screw is now exposed which may be turned clockwise to raise the pressure or turned counter-clockwise to lower the pressure. To test the relief insert test gauge between the motor relief valve and the drive motor. Use the high range and control lever in forward position. This test method puts a pressure between the drive motors and the motor relief must function at its pressure setting. Pressure should be set at 1100 psi. (Diagram on next page)

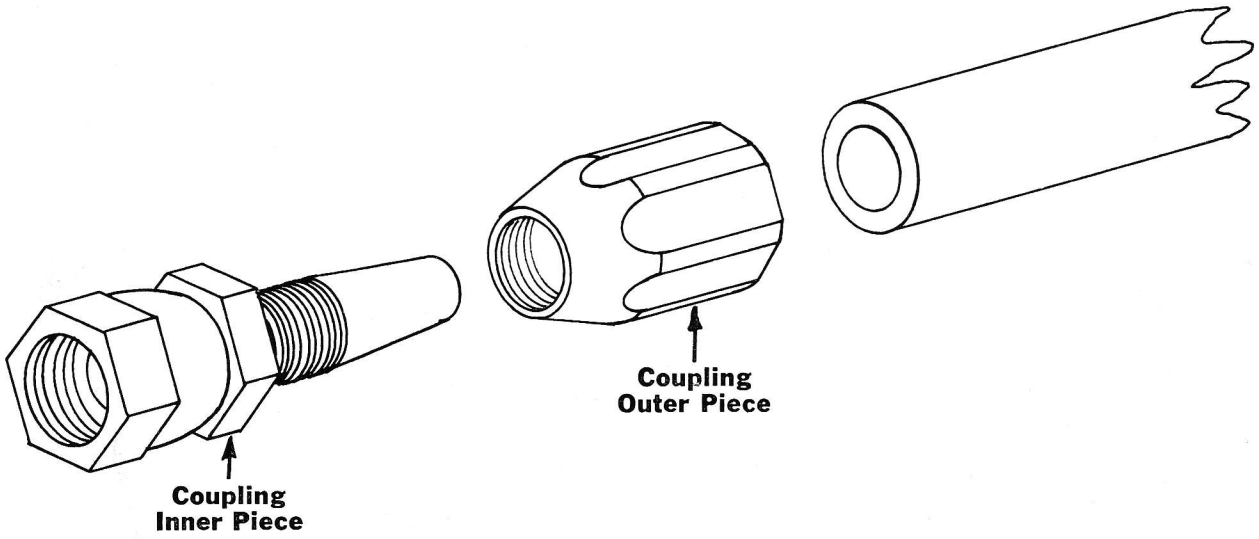


HYDRAULIC HOSES
REMOVAL

2.25 Remove the hose from the fork lift by unscrewing the hose coupling from the adapter. Do not remove the adapter from its component, i. e., pump, motor valve, and etc., unless the component is being replaced.

COUPLINGS

2.26 All the hydraulic hoses on this unit have reuseable couplings. The coupling is made in two pieces which are screwed together clamping the hose between them. Remove the inner piece by clamping the outer piece in a vise and unscrewing the inner piece. The outer piece has a left hand thread which screws on the hose. To remove the outer coupling from the hose, turn it in a clockwise direction.



2.27 Reassembling is done in the following manner. First screw the outer piece on the hose, in a counter-clockwise direction, until it seats firmly against the hose. Back the coupling off ¼ turn. Place a small amount of grease 90 weight, on the tapered inner piece and screw the two pieces together. The outer and inner piece properly installed will seat together. Blow out the inside of the hose so no dirt will be introduced into the system.

LIFT CYLINDER

2.28 The lift cylinder has a vee or chevron packing which may be tightened to stop any leakage. There is a brass spanner nut to the top of the outer tube, which forces the vee packing tighter around the ram. Turn the spanner nut in a clockwise direction to tighten the packing. Use only enough pressure to stop the leakage as undue tightening will cause excessive wear on the ram and packing.

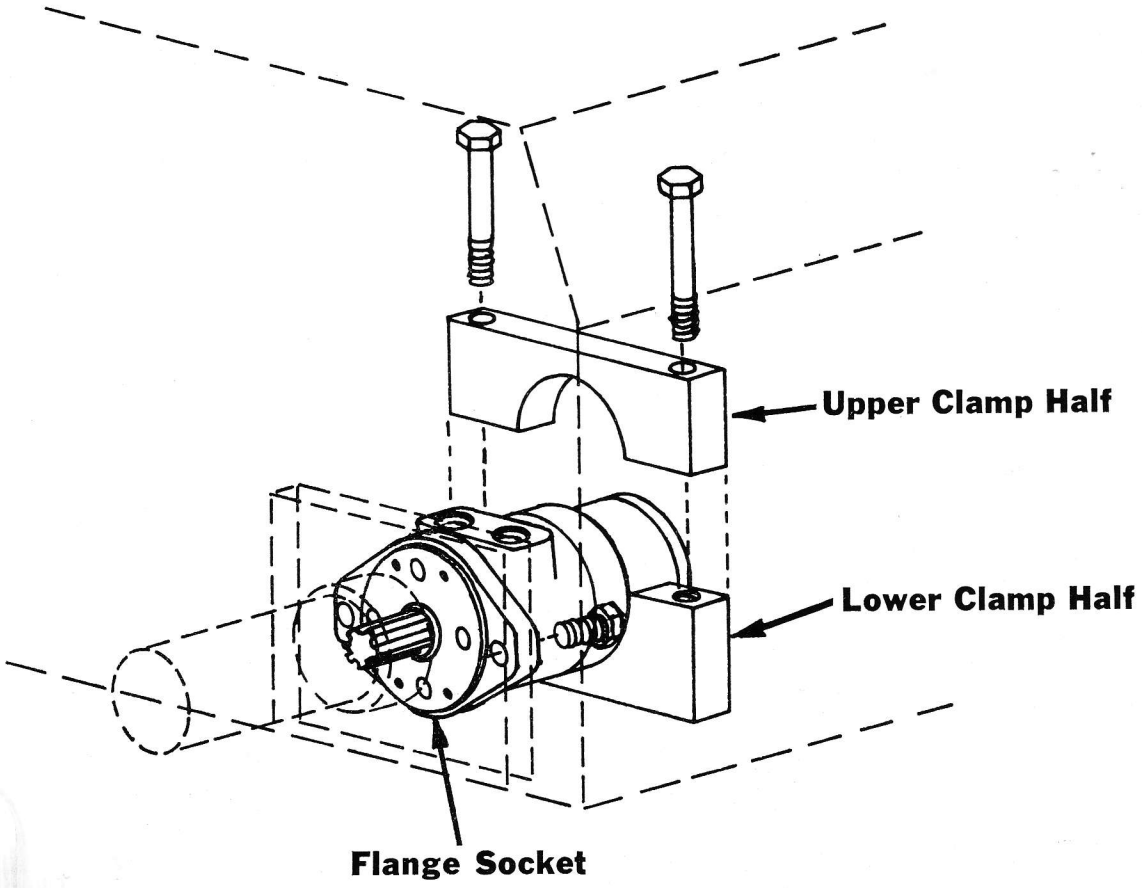
2.29 CAUTION: INSPECT FULL LENGTH OF RAM FOR NICKS OR SCRATCHES WHICH MAY CUT PACKING.

HYDRAULIC DRIVE MOTORS

2.30 To remove disconnect the hose couplings from the adapters on the drive motors. Raise the carriage approximately four feet off the floor and block it up so someone doesn't accidentally let it down. Remove the flange bolt using an open end wrench through the slot provided. Remove the two clamp bolts and clamp holding the rear of the drive motor. Clamp must be replaced in the same position on the same lower half. Wipe clean before reassembly. Unscrew the back flange bolt and remove drive motor. Remove the adapters from the drive motor, noting position, and replace in the new unit to be installed.

2.31 The flange socket in the axle housing should be wiped clean to insure the proper seating of the drive motor. Install the motor shaft into the splined axle and fit the guide flange into the socket. Put the two flange bolts in. Snug each one up before the final tightening to insure proper seating. Put clamp on rear of the drive motor and snug bolts up. Replace the hoses on the proper adapters. Block up the tires so they can be run. With the truck in low range and throttle blocked in running position, start torquing down the clamp bolts. A slight chattering can be heard as the motors are being run. Start with 10 foot-pounds of torque, running approximately 5 minutes, and increase the torque in 5-foot-pound increments until the recommended 30-foot-pounds of torque is reached. Run the motors 5 to 10 minutes between each tightening.

2.32 CAUTION: DO NOT TIGHTEN CLAMP BOLTS IN EXCESS OF 30 FOOT-POUNDS OR MOTOR WILL SEIZE. IF MOTOR SHOULD SEIZE DURING RUN IN, LOOSEN CLAMP BOLTS AND REPEAT RUN IN SEQUENCE.

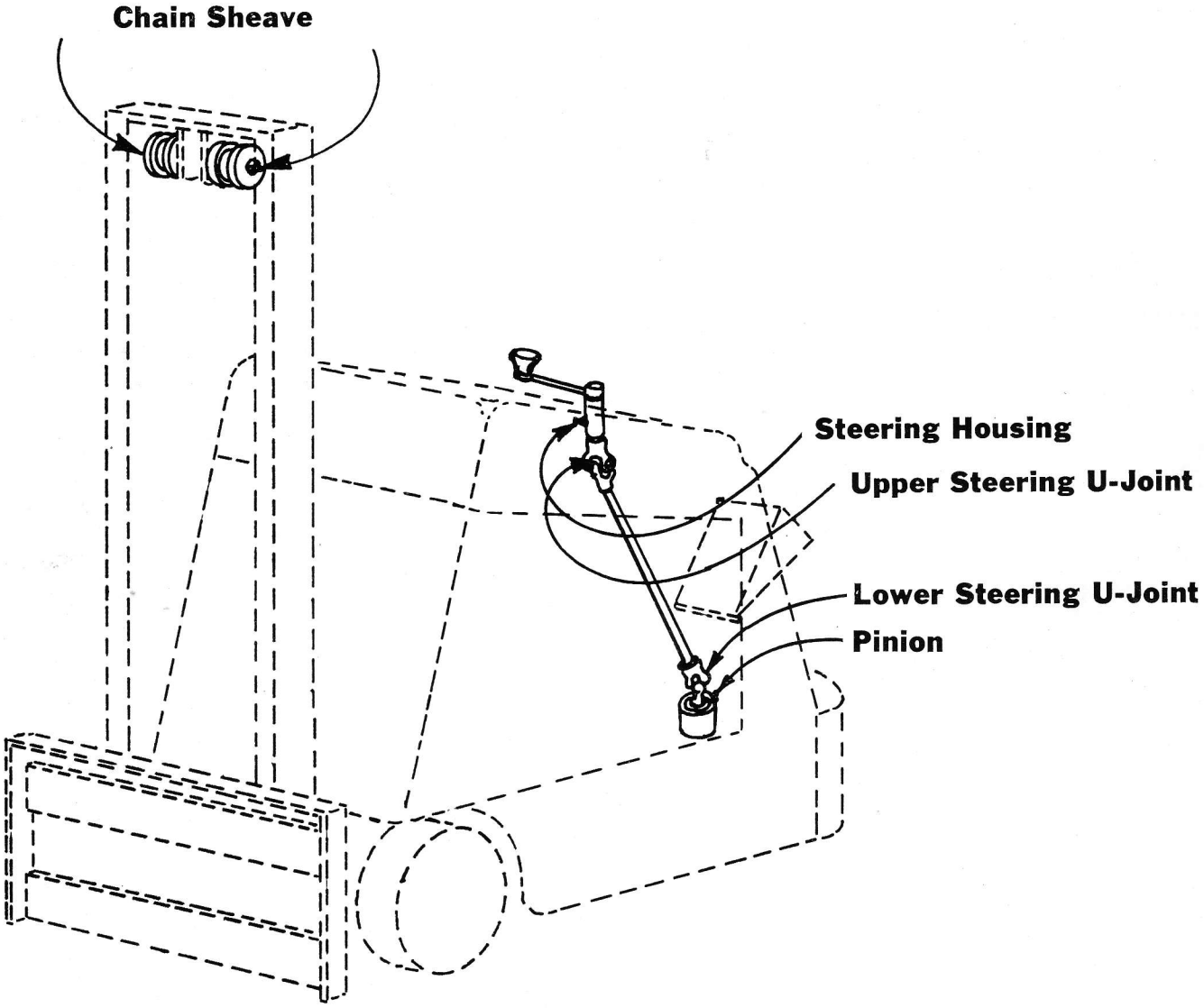


NAMCO

LUBRICATION SECTION

LOCATION OF GREASE ZERKS

3.0 Grease the fork lift truck every 20 hours. This interval should be lessened to 10 hours if the fork lift is operated in a dirty environment. Be sure to grease all six of the zerks. The chain sheave zerks are located in the ends of the bolts holding the sheaves in place. The steering housing and upper steering joint are located in the upper left side of the fork truck hood. The steering cover, located in the center of rear platform, must be raised to grease the lower steering U-joint and the pinion.



NAMCO

FRONT WHEEL BEARINGS

3.1 Repack the wheel bearings every 1000 hours. Six bolts must be removed from the drive plate located on the outside of the wheel. Remove drive plate and set aside. Bend the engaged tabs of the lockwasher out of the slots of the locknut. Block up the truck and remove the locknut. The wheel and tire assembly can now be taken off. Wash bearings in a degreasing solvent, repack with heavy duty wheel bearing grease and replace on truck. Tighten locknut snugly and lock with tab of lockwasher.

REAR WHEEL BEARINGS

3.2 Repack wheel and pivot bearings every 1000 hours.

3.3 Raise the rear of the truck up approximately one foot, placing blocks underneath where the rear platform joints the main frame. Pry off the cap, in the center of the rear platform top, using a large screwdriver. Remove the now exposed cotter and nut. The rear wheel fork assembly will drop out. Use a long punch to drive out the lower pivot bearing and seal.

3.4 Loosen the three pinion adjustment hold down bolts. Rotate adjustment sleeve until the pinion shaft is nearest the front of the truck. This will make the reassembling easier.

3.5 Remove the axle nut from the rear wheel fork assembly. Note the flange side of the wheel has a longer spacer than the other side. Remove wheel by pulling axle out. Take the seals out to remove the bearings.

3.6 Wash the four bearing cones in a degreasing solvent, repack with wheel bearing grease, and install by reversing the above procedure leaving the pinion adjustment until last. Refer to paragraph 1.0 for adjustment procedure.

MAST CHANNELS

3.7 The mast channels should be lightly greased every 1000 hours. This interval should be lessened to every 500 hours if the fork truck is operated in a dirty environment. The old grease should be washed off before regreasing. Use a good grade of chassis grease.

3.8 CAUTION: GREASING EXCESSIVELY CAUSES DIRT TO CLING MAKING THE CHANNELS STICK. IF CHANNELS BIND AND MAST WILL NOT RETRACT, DISASSEMBLE AND THOROUGHLY CLEAN AND RELUBRICATE AFTER ASSEMBLY. THE CARRIAGE LOAD AND SIDE THRUST ROLLERS ARE SEALED NEEDLE BEARINGS AND CANNOT BE LUBRICATED. IF ONE OR MORE FAILS TO TURN FREELY, REMOVE AND REPLACE WITH A NEW ROLLER ASSEMBLY. REFER TO PARTS BOOK FOR BEARING NUMBER.

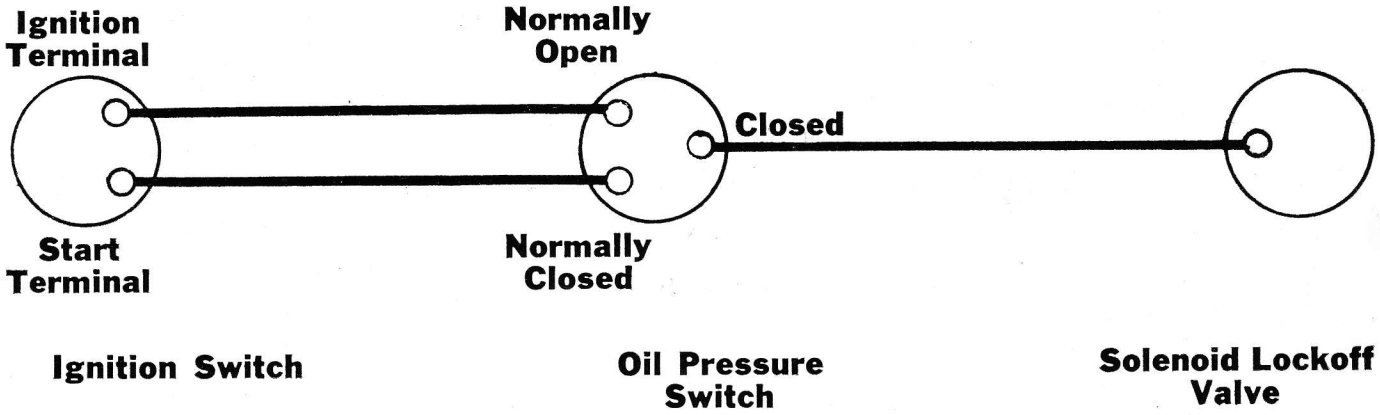
NAMCO

PROPANE FUEL SYSTEM SECTION

4.0 The NAMCO L.P.G. fueled truck is equipped at the factory with high compression cylinder heads and a 14 lb. **VAPOR WITHDRAWAL** cylinder installed in the engine compartment at the left front corner.

4.1 CAUTION: DO NOT USE LIQUID WITHDRAWAL CYLINDERS ON NAMCO OR COMPLETE DESTRUCTION OF THE REGULATORS WILL RESULT.

4.2 ELECTRICAL FUEL CONTROL DIAGRAM



SOLENOID LOCKOFF

4.3 General Control Cat. No. PVIC1154. This solenoid valve automatically stops flow of gas from cylinder to primary regulator when ignition switch is off or when engine stops or when engine oil pressure drops below 5 lbs. pressure. If valve does not function or leaks, check coil for continuity and for voltage when starter is engaged. Disassemble and clean solenoid core, valve stem, and seat.

PRIMARY REGULATOR

4.4 Pressure range 150# inlet, 8 oz. outlet. Outlet pressure should not exceed 8 oz. If regulator fails to pass gas or leaks, disassemble and clean needle and seat. Reset outlet pressure to 8 oz. or 10" water column after assembly. Regulating screw is located under the cap on top of regulator diaphragm bonnet.

SECONDARY REGULATOR

4.5 The only adjustment on the Model "KN" is the lock-off or idle adjustment located just above the fuel inlet. This will normally be set at the factory to lock-off or shut off the flow of gas at an inlet pressure of 4 ounces, unless a different inlet pressure has been specified. This adjustment should be checked after installation with the gas inlet pressure to be used. Open the solenoid and temporarily plug one balance opening and blow into the other balance opening so as to open the seat and allow fuel to flow. Remove the fuel outlet hose and put a soap bubble over the hose nipple. Turn the adjusting screw out or counterclockwise until the fuel seeps through slowly making the soap bubble grow larger. Turn the adjusting screw in slowly until the soap bubble will hold. Check this lock off point several times by repeating the above process of opening the regulator and using the soap bubble to determine if fuel is seeping through. After the lock off point has been determined for the inlet gas pressure used, the screw should never be turned out or counterclockwise. The adjusting screw may be turned in from this point to lean and set the idle mixture. Do not use this screw to set the main load mixture, high speed idle mixture or idle speed.

4.6 NOTE: SMALL SCREENED VENT OPENING AT SIDE OF HOUSING MUST BE CLEAN AND OPEN TO PERMIT PROPER OPERATION OF REGULATOR.

4.7 NOTE: BOTH PRIMARY AND SECONDARY REGULATORS MAY BEST BE ADJUSTED ON THE BENCH WITH AIR PRESSURE BEFORE REINSTALLING IN THE NAMCO TRUCK.

CARBURETOR

4.8 The LPG carburetor is a standard ONAN unit furnished with the engine and parts may be purchased from NAMCO or from your local ONAN service station.

HIGH SPEED JET

4.9 The adjusting screw is located on the front of the carburetor body just below the fuel inlet connection. It is the large knurled screw facing the front of the lift truck. Turn screw counter-clockwise about two full turns and start engine. Run engine five minutes to warm up. Open throttle control to full speed and slowly turn screw clockwise until engine speed reduces. Turn screw counter-clockwise until engine resumes full speed. Push tilt lever forward to load engine and readjust screw until maximum speed is obtained. NOTE: ALWAYS SET ADJUSTMENT ON LEAN SIDE FOR MAXIMUM FUEL ECONOMY.

IDLE JET

4.10 The adjusting screw is located on the left side of the carburetor body just below the fuel inlet connection. It is a small knurled screw. With engine idling, turn screw clockwise until speed reduces. Back screw out until idling speed increases to maximum. Load engine with tilt control and readjust to prevent engine stalling. If stalling persists, increase idling speed slightly and readjust. NOTE: THE GOVERNOR OR SPEED CONTROL SPRING **MUST** BE TIGHT ENOUGH TO ACTUATE GOVERNOR WHEN LOAD IS APPLIED TO ENGINE BUT LOOSE ENOUGH TO RETURN ENGINE TO NORMAL IDLE SPEED WHEN UNLOADED. NORMAL UNLOADED IDLE SPEED IS 800 TO 900 RPM.

NAMCO

TROUBLE SHOOTING GUIDE

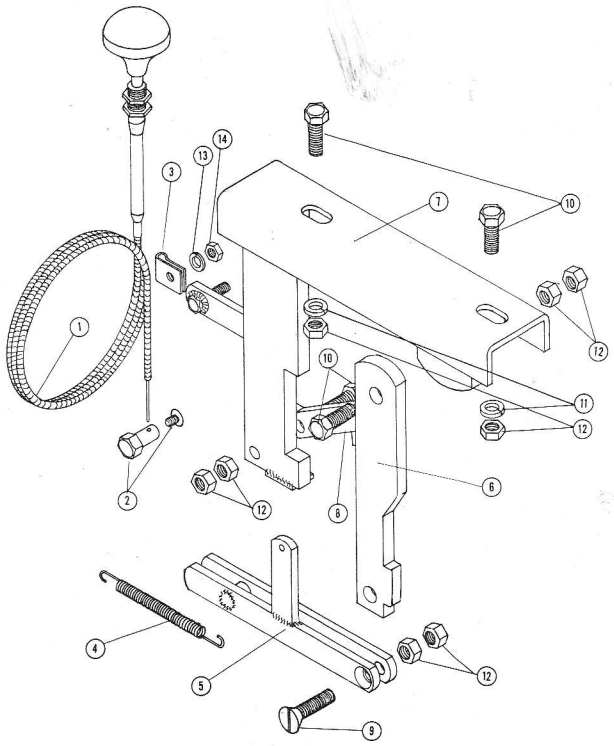
Trouble	Probable Cause	Remedy
1. Motionless in low range, high range okay.	Drive axle spindles worn or sheared off.	Replace axle. Refer to para. 1.12
	Drive plate spindles worn or sheared off.	Replace drive plate. Refer to Para. 1.12
	Shift rod stretched or pins worn.	Adjust linkage or replace pins. Refer to para. 2.7
	Drive motor worn or damaged internally.	Replace drive motor. Refer to para. 2.30.
2. Motionless or sluggish in all functions; low and high range, lift and tilt.	Key in pump chain coupler sheared.	Replace key.
	Chain coupler worn.	Replace chain and sprockets.
	Suction filter dirty or leaking air.	Clean filter and reseal gaskets. Replace gaskets if necessary. Refer to para. 2.8.
	Hydraulic oil reservoir low.	Fill to full level on dipstick with forks fully lowered.
	Pilot operated main relief valve is being held open by foreign matter.	Remove main relief and clean. Refer to para. 2.14.
	Main relief valve pressure set too low.	Reset pressure to 1250 psi. Refer to para. 2.14.
	Engine lacks power.	Clean carbon from heads. Reset timing, carburetor, throttle linkage. Overhaul engine if necessary. Check engine compression. Refer to Onan engine manual.
	Badly worn pump.	Replace pump. Refer to para. 2.2.
3. Truck is sluggish in high or low but good in one or the other.	Two speed linkage out of adjustment.	Readjust linkage to insure proper actuation. Refer to para. 2.7.
	Drive motor hoses on wrong connections.	Plumb correctly, refer to hydraulics page in parts book.
4. Lift function does not operate. Tilt, high and low motion works.	Dirty cylinder port relief valve or broken spring.	Relief valve on underside of center stack of the main valve should be removed and cleaned in solvent. Refer to para. 2.18.
	Engine lacks power.	Clean carbon from heads, reset timing, carburetor, or throttle linkage. Refer to ONAN Engine Manual.
5. Lift creeps downward, will not maintain load height.	Broken "O" Ring at the relief valve seat.	Replace, use No. 10 "O" ring.
	Dirty cylinder port relief valve or broken spring.	Relief valve on underside of center section of the main control valve should be removed and washed with solvent. Refer to para. 2.18.
	Relief pressure set too low.	Increase tension using a ⅛" Allen wrench to turn clockwise. Refer to para. 2.18.
	Badly worn valve, spool bypassing.	Replace valve section.

Trouble	Probable Cause	Remedy
6. Tilt creeps forward, will not hold mast in vertical position.	Broken or worn "O" ring at the relief valve seat.	Replace, use No. 10 "O" Ring. Refer to para. 2.22.
	Dirty cylinder port relief.	Remove cylinder port relief from underside of the left end section in the main control valve, and clean. Refer to para. 2.22.
	Relief pressure set too low.	Add shim in cap. Refer to para. 2.22.
	Badly worn valve, spool bypassing.	Replace valve section.
7. Truck moves jerky but engine is running smoothly, pump has a high pitched noise.	Pump cavitating from air being introduced into suction line or filter.	Check all connections for proper seating. Suction filter cover or hold down bolt seal leaking air. Refer to para. 2.8.
	Low hydraulic oil level in reservoir.	Fill to full level on dipstick with mast fully collapsed.
8. Breaking axles.	Main relief pressure set too high.	Reset pressure to 1250 psi. Refer to para. 2.14.
	Motor cross over relief at the two speed set too high.	Reset pressure to 1100 psi. Refer to para. 2.24.
9. Hoses break.	Pressures set too high.	Reset main and cross over reliefs. Refer to para. 2.14-2.24.
	Worn hose.	Replace hose.
10. Oil leaks in hydraulic lines.	Damaged "O" Rings on adapters.	Replace.
	Leaking coupling at hose fitting.	Remove coupling, cut approximately 1" off hose and replace. Refer to para. 2.26.
	Worn hose.	Replace hose.
11. Engine is sluggish or inoperative.	Check Onan Service Manual.	Tune Engine.
	Carbon in heads.	Remove and clean.
12. Throttle does not return to idle position.	Throttle spring at fire wall disconnected or broken.	Replace or reinstall. Refer to para. 1.5.
13. Engine does not respond to throttle.	Throttle wire broken or disconnected.	Connect or replace.
	Adjustment at throttle arm on engine set too loose, will not tighten spring hooked to end of cable.	Readjust so engine runs at 2400 RPM. Refer to para. 1.5.
	Stretched throttle spring on the engine.	Readjust or replace. Refer to para. 1.5.
	Throttle wire casing clamps loose.	Tighten.
14. Parking brake does not work.	Cable control wire broken.	Replace.
	Cable control wire disconnected.	Reinstall.
	Pawl not engaging toothed gear.	Readjust. Refer to para. 1.9.
	Toothed gear or pawl badly worn.	Replace. Refer to para. 1.9.
	Pawl guide out of adjustment.	Readjust.

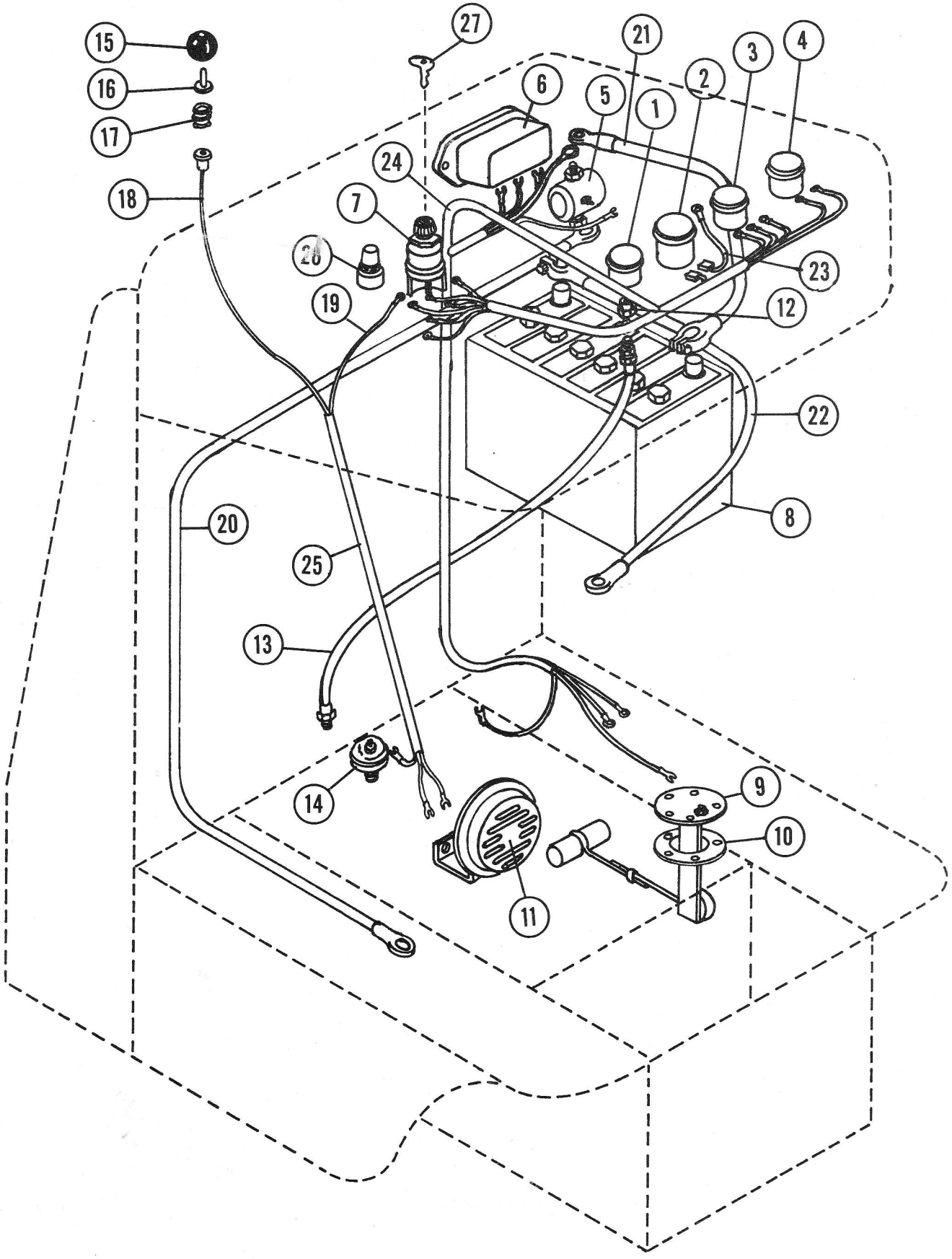
Trouble	Probable Cause	Remedy
15. Hydraulic cylinders leak.	Chevron packing in lift cylinder too loose.	Tighten. Refer to para. 2.28.
	Packing or "O" rings worn.	Replace.
16. Steering loose, excessive play.	Pinion and steering gear not meshing properly.	Adjust. Refer to para. 1.0.
	Loose steering gear.	Remove rear wheel fork and tighten bolts holding gear. Refer to para. 3.3.
	Worn U-Joints.	Replace.
	Worn pinion or steering gear.	Replace.
17. Steering hard.	Dry bearings and U-Joints.	Lubricate.
	Pinion meshing to tightly with steering gear.	Readjust. Refer to para. 1.0.
	Broken bearing in adjustment sleeve.	Replace.
	Steering shaft rubbing frame.	Readjust.
18. Carriage develops side play.	One lift chain too tight.	Adjust for same tension. Refer to para. 1.7.
	Natural wear.	Remove carriage and shim side thrust rollers.
19. Mast sticks.	Dry slides.	Lubricate.
	Dirty channels.	Clean.
	Carriage twisting.	Adjust lift chains. Refer to para. 1.7.
	Lift cylinder binding.	Loosen packing nut. Refer to para. 2.28.
	Mast locks loose.	Tighten.
	Broken or loose rollers.	Tighten or replace.
	Inner mast bent.	Remove and straighten.
20. Mast has side play.	Mast locks loose.	Tighten.

NAMCO

Brake Assembly



			No. Req'd.
1.	100,591	Control Cable	1
2.	100,592	Thimble	1
3.	100,593	Casing Clip	1
4.	100,594	Spring	1
5.	100,185	Brake Link	1
6.	100,190	Brake Arm	1
7.	100,184	Brake Channel	1
8.	100,180	Rear Link	1
9.		3/8" x 1" N.C. Flat Head Stove Bolt	1
10.		3/8" x 1" N.C. Hex Head Screw	4
11.		3/8" Lock Washer	2
12.		3/8" Hex Nut	6
13.		5/16" Lock Washer	1
14.		5/16" Hex Nut	1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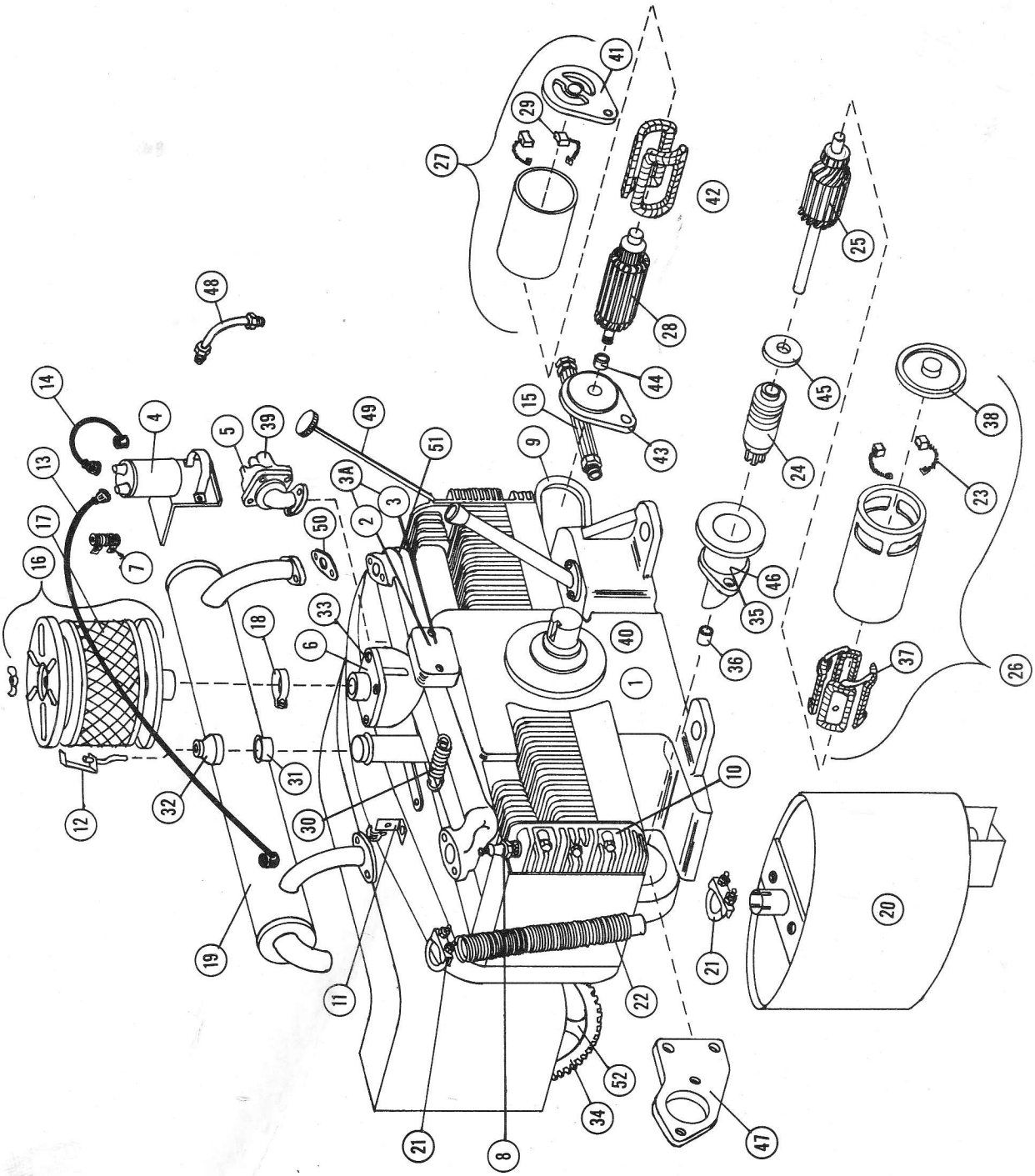
NAMCO

Electrical Components

			No. Req'd.
1.	100,595	Oil Gauge	1
	100,752	Electric Oil Gauge	
2.	100,597	Hour Meter	1
3.	100,598	Ammeter Gauge	1
4.	100,599	Gasoline Gauge	1
5.	100,600	Starter Solenoid	1
6.	100,601	Voltage Regulator	1
7.	100,603	Ignition Switch	1
	101,397	Ignition Switch, 2 Position Off-On	
8.	100,602	Battery, Group 2SM	1
9.	100,618	Gasoline Sending Unit	1
10.	100,706	Gasoline Sending Unit Gasket	1
11.	100,604	Horn	1
12.	100,608	Adapter, Oil Gauge	1
13.	100,609	Pressure Hose, Oil Gauge	1
14.	100,753	Electric Oil Pressure Sending Unit	1
15.	100,631	Knob	1
16.	100,617	Push Button	1
17.	100,616	Spring	1
18.	100,615	Ground Wire	1
19.	100,614	Horn Wire	1
20.	100,610	Starter Cable	1
21.	100,611	Battery Cable	1
22.	100,612	Ground Cable	1
23.	100,639	Hour Meter Ground Wire	1
24.	100,613	Wiring Harness	1
25.	100,842	Ignition Wire Harness, Gasoline	1
	100,821	Ignition Wire Harness, Propane	1
26.	101,398	Starter Button Switch	1
27.	101,167	Ignition Key	1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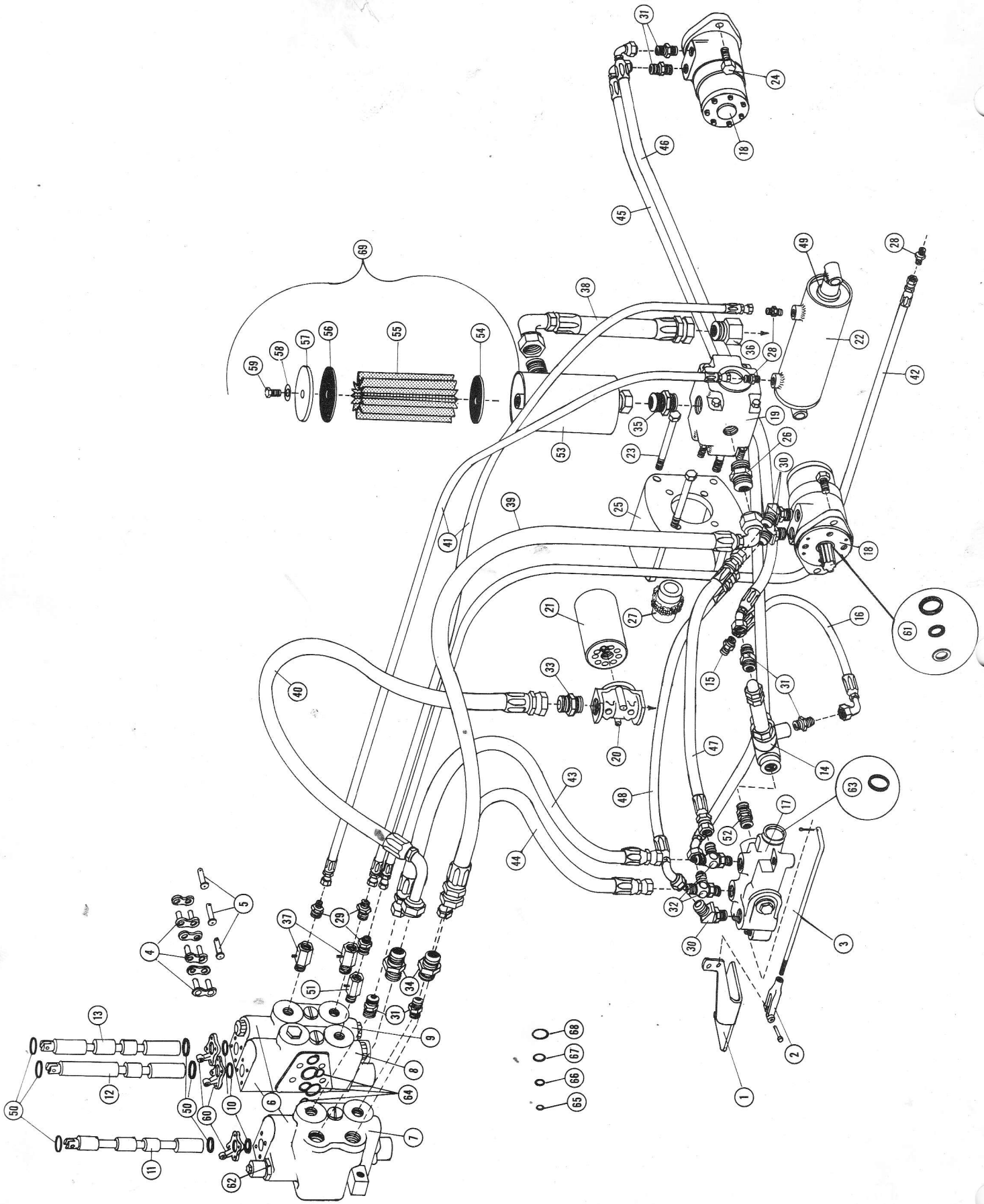
NAMCO
Engine Components

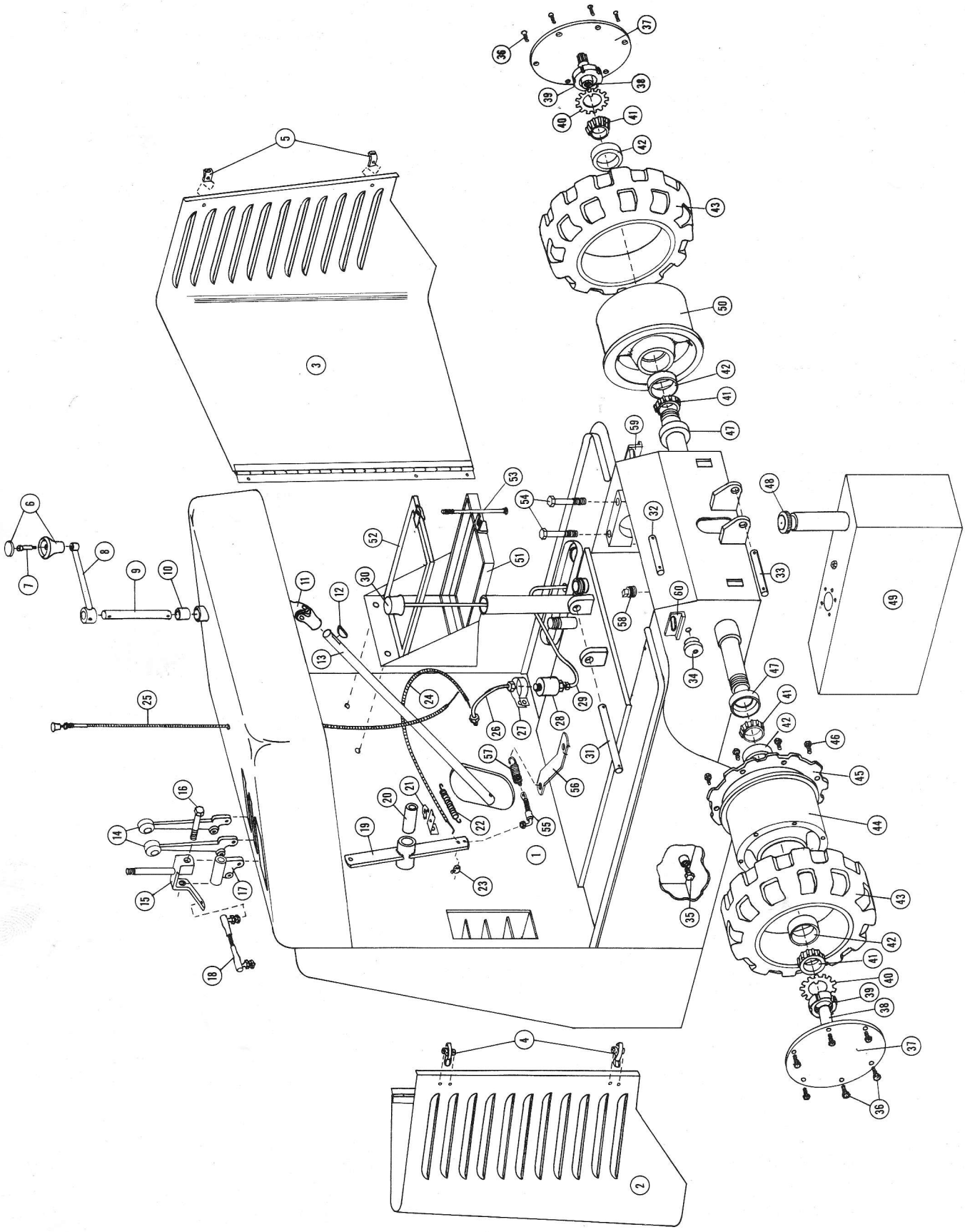
			No. Req'd.
1.	100,560	Onan Engine Gasoline	1
	100,768	Onan Engine Propane	1
	100,903	Short Block Assy.	
	101,321	Engine Oil Base Onan 102B572	
2.	100,561	Ignition Points Onan 160A2	1
3.	100,562	Condenser Onan 312A69	1
3A.	100,846	Ignition Kit (Points & Condenser) Onan 160K836	1
4.	101,165	Coil Onan 166C346	1
		Prior to Serial No. 51011 use 100,563 Coil Onan 160C792	
5.	100,564	Fuel Pump Repair Kit Onan 149K526	1
6.	100,718	Carburetor Repair Kit Gasoline Onan 142K371	1
7.	100,719	Resistor Onan 304-60	1
8.	100,720	Spark Plug, Champion H-8	2
9.	100,721	Belt, Generator "O" Series 38" V-Belt	1
	101,554	Belt, Alternator 37" V-Belt	
	101,408	Belt, Enclosed Generator 39" V-Belt	
10.	100,722	Head Gasket Onan 110A892	2
11.	100,713	Clip Boden Wire Onan 518P176	2
12.	100,217	Breather	1
13.	101,173	Spark Plug Wire, Long	1
14.	101,174	Spark Plug Wire, Short	1
15.	100,883	Oil Drain Hose Assembly	1
16.	100,779	Air Cleaner Fram FA-121-4PL	1
17.	100,805	Air Cleaner Element Fram CA-121PL	1
18.	100,797	Clamp, Air Cleaner	1
19.	100,804	Muffler Manifold	1
		Prior to Serial No. 33030 Use 100,651 which has the exhaust outlet facing toward the rear.	
20.	100,403	Muffler	1
	100,799	Muffler, Spark Arrestor	
21.	100,798	Clamp	2
22.	100,407	Exhaust Pipe	1
23.	100,810	Brush Set, Starter AL-17-14	1
24.	100,811	Starter Bendix Drive AL-63-72	1
25.	100,812	Starter Armature AL-16-39	1
26.	100,813	Starter Assembly AL-46-79 191B150	1
		After Serial No. 44083 use 101,178	
		Starter Assembly AL#MBG4134	
		191C511	
27.	100,939	Generator Assembly DR1100426	1
28.	100,815	Generator Armature DR1928952	1
29.	100,816	Brush Set, Generator DR1923295	2
30.	101,113	Spring, Gov. Arm Onan 150A698	1
31.	100,838	Breather Valve Onan 123A104	1
32.	101,150	Breather Cap Onan 123A73	1
33.	101,002	Carburetor, Gasoline Onan 142A363	1
34.	101,001	Starter Ring Gear Onan 134C693	1
35.	100,951	Starter Drive Housing AL-21-135	1
		After Serial No. 44083 use 101,169	
		Starter Drive Housing	
36.	100,952	Starter Drive Bearing AL-24-23	1
37.	100,950	Field Coil, Starter AL-20-14	1
38.	100,949	Starter End Plate AL-19-27	1
39.	100,900	Fuel Pump Onan 149D693	1
40.	100,847	Gasket Kit, Carbon Removal Onan 168K95	1
41.	100,940	Generator End Plate DR1951512	1
42.	100,941	Gen. Field Coil (Pair) DR1927700	1
43.	100,942	Generator Drive End Plate DR1871693	1
44.	100,945	Generator Drive End Bearing ND3203S1446	1
45.	101,168	Intermediate Starter Bearing AL-36-4	1
46.	101,169	Starter Drive Housing	1
		Prior to Serial No. 44084 use 100,951	
47.	101,218	Starter Mounting Flange Onan #191C508. Before 44084 use 101,008 Onan 191C129	1
48.	101,108	Fuel Line	1
49.	101,402	Dip Stick	1
50.	101,324	Muffler Gasket	1
51.	101,499	Manifold Gasket	1
52.	101,562	Fly Wheel W/Gear	1



NAMCO

Hydraulic Components

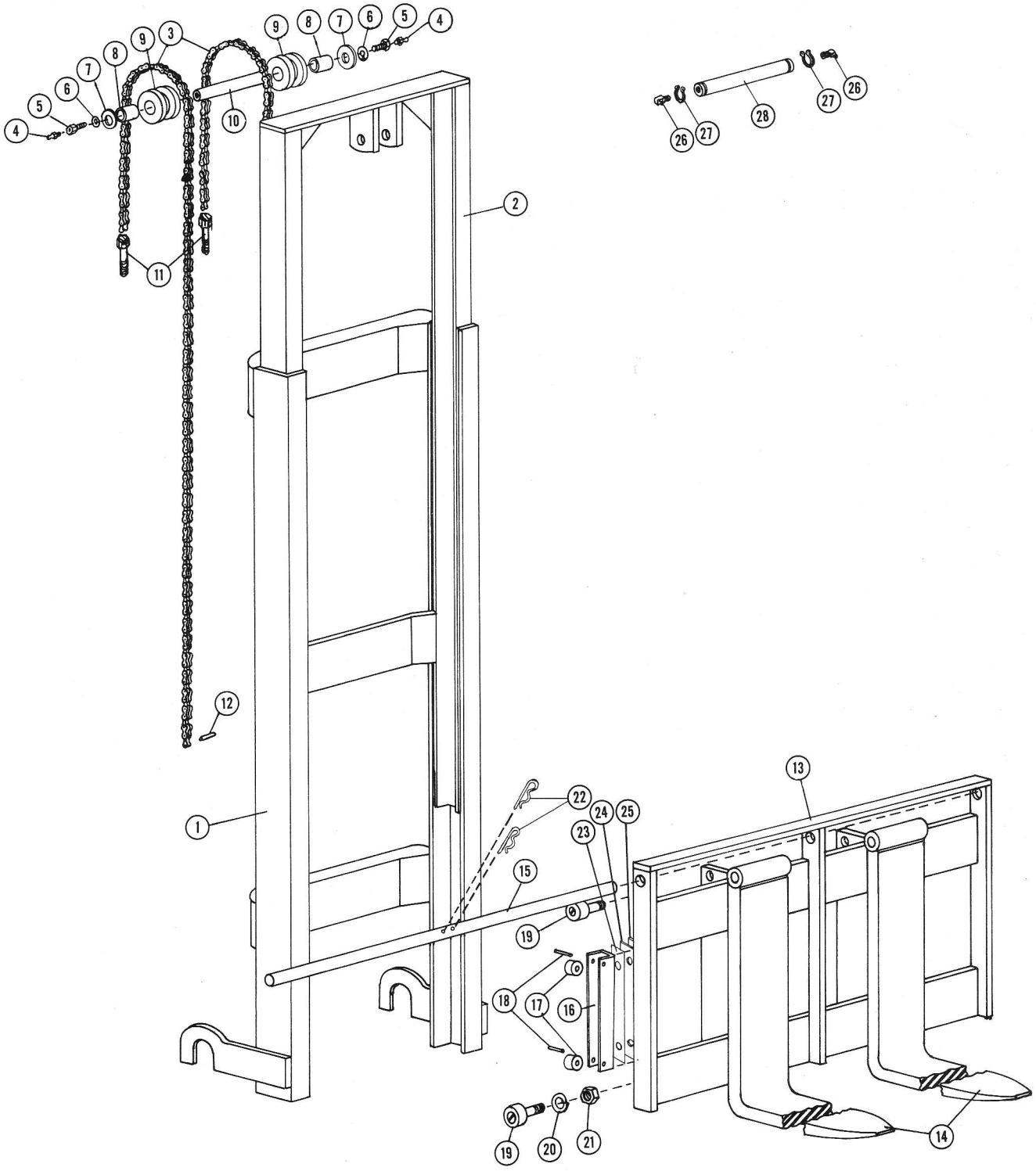
			No. Req'd.
1.	100,153	Foot Pedal	1
		Prior to Serial No. 32017 use 100,150	
2.	100,501	Clevis, Shift	1
3.	100,156	Shift Rod	1
		Prior to Serial No. 32017 use 100,152	
4.	101,213	Control Link, No. 435 Pin, Cotter Type	3
5.	101,214	Control Pin, ¼" x 1"	3
6.	100,504	Valve Assembly	1
7.	100,505	Drive Motor Valve Section Only	1
8.	100,506	Lift Valve Section Only	1
9.	100,507	Tilt Valve Section Only	1
10.	100,717	Seal Ring, Valve Spool	3
		Prior to Serial No. 42001	
		Inspect Seal, if metal encased	
		order No. 100,754 oil seal C/R123HM28	
11.	100,783	Motor Spool Only	1
12.	100,819	Lift Spool Only	1
13.	100,820	Tilt Spool Only	1
14.	100,792	Relief Valve, Motor	1
15.	100,794	Adapter #10 x ½ I.P.T.	1
16.	100,790	Relief Hose #10	1
	100,545	Straight Fitting #10	
	100,551	90° Hose Fitting #10	
	100,791	Hose Only 13¾" #10	
17.	100,775	Two-Speed Motor Valve	1
		Prior to Serial No. 32017 use 100,508	
18.	100,509	Hydraulic Drive Motor, 1¼"	2
	100,788	Hydraulic Drive Motor, 1½"	
	100,723	Hydraulic Drive Motor, High Torque 2"	
19.	100,786	Hydraulic Pump, Char-Lynn P-411	1
		Prior to Serial No. 32017 use 100, 511 P-410	
20.	100,513	Hydraulic Oil Filter Mount	1
21.	100,514	Hydraulic Oil Filter Cartridge	1
22.	100,650	Tilt Cylinder	1
23.		Pump Mount Cap Screw ⅜" x 4¾" N.C.	4
24.	100,346	Motor Mount Cap Screw ½" x 1¼" N.F.	4
25.	100,125	Pump Mount	1
26.	100,524	Straight Adapter #12	1
		Prior to Serial No. 32017 use 100,523	
27.	100,517	Chain Coupler	1
28.	100,518	Straight Adapter #6	3
29.	100,519	Straight Adapter #8 x #6	3
30.	100,520	45° Adapter #10	3
31.	100,521	Straight Adapter #10	6
32.	100,522	Tee #10	2
33.	100,523	Straight Adapter #12 x ¾ I.P.T.	1
34.	100,524	Straight Adapter #12	2
35.	100,746	Straight Adapter #12 x #16	1
		Prior to Serial No. 32017 use 100,525	
36.	100,526	Straight Adapter #16 x 1" I.P.T.	1
37.	100,527	Restrictor #8	2
38.	100,528	Hose Assembly Suction #16	1
	100,529	Straight Hose Fitting #16	
	100,530	90° Hose Fitting #16	
	100,531	Hose Only 14" Long #16	
39.	100,532	Hose Assembly Main Pressure #12	1
	100,533	90° Hose Fitting #12	
	100,534	Straight Hose Fitting #12	
	100,535	Hose Only 23⅝" Long #12	
40.	100,536	Hose Assembly Return #12	1
	100,537	90° Long Tangent Hose Fitting #12	
	100,534	Straight Hose Fitting #12	
	100,538	Hose Only 33¾" Long #12	
41.	100,539	Hose Assembly Tilt Cylinder #6	2
	100,540	Straight Hose Fitting #6	
	100,541	Hose Only 26⅝" #6	
42.	100,542	Hose Assembly Lift Cylinder #6	1
	100,540	Straight Hose Fitting #6	
	100,543	Hose Only 51⅝" #6	
43.	100,544	Hose Assembly Front Drive #10	1
	100,545	Straight Hose Fitting #10	
	100,546	Hose Only 28⅞" #10	
44.	100,547	Hose Assembly Rear Drive #10	1
	100,545	Straight Hose Fitting #10	
	100,548	Hose Only 23⅝" #10	
45.	100,549	Hose Assembly Rear Left Motor #10	1
	100,550	45° Hose Fitting #10	
	100,551	90° Hose Fitting #10	
	100,552	Hose Only 17⅝" #10	
46.	100,553	Hose Assembly Front Left Motor #10	1
	100,550	45° Hose Fitting #10	
	100,551	90° Hose Fitting #10	
	100,554	Hose Only 12⅞" #10	
47.	100,555	Hose Assembly Front Right Motor #10	1
	100,545	Straight Hose Fitting #10	
	100,556	Hose Only 14⅝" #10	
48.	100,557	Hose Assembly Rear Right Motor #10	1
	100,551	90° Hose Fitting #10	
	100,545	Straight Hose Fitting #10	
	100,558	Hose Only 16½" #10	
49.	100,716	Seal Kit, Tilt Cylinder	1
50.	100,901	Seal Ring, Valve Spool	6
51.	100,776	Restrictor Lift Cylinder	1
52.	100,793	Union #10	1
53.	100,209	Filter Case	1
54.	100,212	Lower Gasket	1
55.	100,751	Suction Filter Element (100 Mesh Screen)	1
56.	100,211	Upper Gasket	1
57.	100,205	Cover Plate	1
58.	100,800	Stat-O-Seal	1
59.		¾" x ½" N.C. Hex Head Cap Screw	1
60.	100,349	Handle Bracket	3
61.	101,128	Seal Kit, Hydraulic Motor	1
62.	101,125	Main Relief Gasket, Copper	1
63.	100,902	Quad Ring Seal, 2-speed Valve	2
64.	101,221	Valve Section Seal Kit	2
65.	100,936	"O" Ring #6, .468 I.D. x .078 W	3
66.	101,151	"O" Ring #8, .644 I.D. x .087 W	6
67.	100,937	"O" Ring #10, .755 I.D. x .097 W	12
68.	100,938	"O" Ring #12, .924 I.D. x .116 W	4
69.	100,213	Suction Filter Assy.	1



NAMCO

Main Frame Components

			No. Req'd.
1.	100,000	Main Frame	1
2.	100,142	Right Hood Side	1
3.	100,143	Left Hood Side	1
4.	100,632	Hook	2
5.	100,633	Strike	2
6.	100,626	Steering Knob Prior to Serial No. 31001 order No. 100,122 Steering Tiller with the above steering knob.	1
7.		3/8" x 2" Socket Head Shoulder Screw	1
8.	100,122	Steering Tiller Prior to Serial No. 31001 order No. 100,626 Steering Knob with the above steering tiller.	1
9.	100,114	Upper Steering Shaft	1
10.	100,581	Bushing 7/8" I.D. x 1" O.D. x 1" long	2
11.	100,629	Steering U Joint Upper	1
12.		1/4" x 1 Woodruff Key	2
13.	100,113	Intermediate Steering Shaft	1
14.	100,170	Control Handle	2
15.	100,166	Control Lever	1
16.		3/8" x 2 1/2" N.C. Hex Head Cap Screw	1
17.	100,168	Pivot	1
18.	100,158	Throttle Linkage	1
19.	100,174	Bellcrank	1
20.	100,157	Valve Spacer	3
21.	100,713	Throttle Wire Clip	1
22.	100,503	Throttle Spring	1
23.	100,623	Throttle Stop	1
24.	100,502	Throttle Cable	1
25.	100,500	Choke Cable	1
26.	100,784	Fuel Line to Engine	1
27.	100,214	Fuel Filter Mount	1
28.	100,780	Fuel Filter Purolator GF-11-4 Prior to Serial No. 33030 use No. 100,624 Fuel Filter Purolator GF-11	1
29.	100,785	Fuel line to Tank	1
30.	100,587	Hydraulic Oil Cap	1
31.	100,092	Anchor Pin	1
32.	100,037	Tilt Pin	1
33.	100,092	Anchor Pin	1
34.	100,031	Mast Lock	2
35.	101,529	Drain Plug, Magnetic	1
36.	101,234	5/16" x 1" N.C. Nylock Flat Socket Head Cap Screw	12
37.	100,087	Axle Plate Prior to Serial No. 33030 order No. 100,095 Axle Tube with above Axle Plate.	2
38.	100,095	Axle Tube Prior to Serial No. 33030 order No. 100,087 Axle Plate with the above Axle Tube.	2
39.	100,566	Lock Nut	2
40.	100,567	Lock Washer	2
41.	100,568	Bearing Cone Timken No. 387	4
42.	100,569	Bearing Cup Timken No. 382	4
43.	100,571	Drive Tire, Rubber 13 x 4 1/2 x 8	2
	101,176	Drive Tire, Neoprene, 13 x 4 1/2 x 8	
	101,219	Drive Tire, Polyurethane, 13 x 4 1/2 x 8	
	101,235	Drive Tire, Non Marking 13 x 4 1/2 x 8	
	101,236	Drive Tire, Abrasive 13 x 4 1/2 x 8	
	101,289	Drive Tire, Siped 13 x 4 1/2 x 8	
44.	100,083	Drive Wheel, Right	1
45.	100,191	Brake Gear Prior to Serial No. 31001 order 100,190 Brake Arm with the above brake gear	1
46.		5/16" x 1" N.C. Hex Head Cap Screw	6
47.	100,570	Seal C/R 387W220-M1	2
48.	100,589	Gas Cap	1
49.	100,588	Gas Tank	1
50.	100,080	Drive Wheel, Left	1
51.	100,279	Battery Case	1
52.	100,710	Battery Hold Down	1
53.		5/16" x 8" N.C. Carriage Bolt	
54.		1/2" x 3 1/2 N.C. Hex Head Cap Screw	4
55.	101,152	Throttle Adjustment Rod	1
56.	101,129	Throttle Extension Arm	1
57.	101,113	Spring, (Gov. Arm Onan 150A698	1
58.		1/2" Iron Pipe Plug	1
59.	100,434	Mast Lock, Left	1
60.	100,433	Mast Lock, Right	1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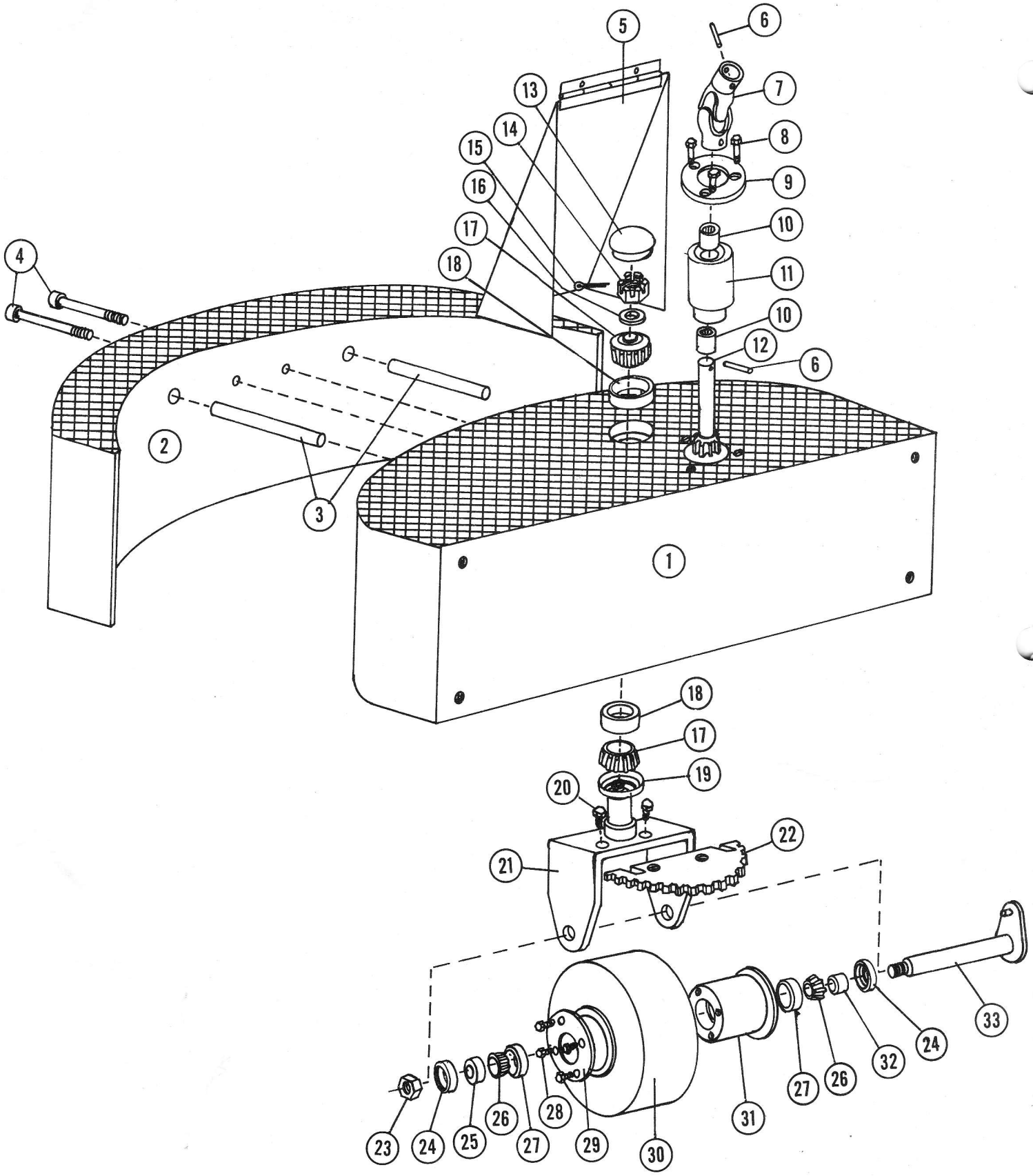
NAMCO
Mast Components

			No. Req'd.
1.	100,242	Outer Mast 88″ Lift	1
	100,243	Outer Mast 106″ Lift	
	100,247	Outer Mast 120″ Lift	
	101,092	Outer Mast, 130″ Lift	
	101,100	Outer Mast, 144″ Lift	
2.	100,238	Inner Mast 88″ Lift	1
	100,239	Inner Mast 106″ Lift	
	100,246	Inner Mast 120″ Lift	
	101,090	Inner Mast, 130″ Lift	
	101,098	Inner Mast, 144″ Lift	
3.	100,664	Lift Chain, 88″ Lift #6H5 Leaf Chain, 103P	2
	100,665	Lift Chain, 106″ Lift #6H5 Leaf Chain, 115P	
	100,670	Lift Chain, 120″ Lift #6H5 Leaf Chain, 125P	
	101,095	Lift Chain, 130″ Lift #6H5 Leaf Chain 133P	
	101,103	Lift Chain, 144″ Lift #6H5 Leaf Chain 144P Prior to Serial No. 31001 order No. 100,585 Lift Chain, #50 Roller Chain (Specify Lift Height)	
	100,224	Free Lift Chain, 88″ Lift #6H5 Leaf Chain, 161P	
	100,223	Free Lift Chain, 106″ Lift, #6H5 Leaf Chain, 175P	
	100,240	Free Lift Chain, 120″ Lift. #6H5 Leaf Chain, 183P Prior to Serial No. 33001 Order No. 100.339 Free Lift Chain, 106″ Lift, #6H5 Leaf Chain, 67P	
4.		¼″ Grease Zerk	2
5.	100,040	Lift Pin Bolt	2
6.		½″ Lock Washer	2
7.		½″ Washer	2
8.	100,590	Bushing 1″ ID x 1⅛″ OD x 1½″ Long	2
9.	100,068	Lift Sheave. Prior to Serial No. 31001 order No. 100,039 Lift Sprocket	2
	100,295	Free Lift Chain Sheave	
10.	100,093	Lift Pin	1
	100,094	Free Lift Pin	
11.	100,066	Adjustment Bolt, Prior to Serial No. 31001 use No. 100,061	2
12.	100,663	Pin Leaf Chain Connecting. Prior to Serial No. 31001 Use #50 Roller Chain Connecting Link	4
13.	100,250	Carriage, Prior to Serial No. 31001 use 100,050	1
	100,299	Free Lift Carriage	
14.	100,260	Fork 30″	2
	100,261	Fork 36″	
	100,262	Fork 42″	
	100,275	Quick Detachable Fork 30″	
	100,278	Quick Detachable Fork 36″	
	100,283	Quick Detachable Fork 42″	
	100,411	Full Taper Fork 30″	
	100,414	Full Taper Fork 36″	
	100,417	Full Taper Fork 42″	
	100,410	Quick Detachable Full Taper Fork 30″	
	100,413	Quick Detachable Full Taper Fork 36″	
	100,416	Quick Detachable Full Taper Fork 42″. Prior to Serial No. 31001 use 100,059 (Specify Length and Style)	
15.	100,057	Fork Slide Rod	1
16.	100,071	Thrust Bearing Mount	2
17.	100,661	Thrust Bearing McGill No. CYR 1½ S	4
18.	100,662	$\frac{7}{16}$″ x 1½″ Roll Pin	4
19.	100,565	Guide Bearing McGill No. CF-2-S Prior to Serial No. 31001 Specify McGill No. CF-1 ¾-S	4
20.		⅞″ Lockwasher. Prior to Serial No. 31001 use ¾″ Lockwasher	4
21.		⅞″ N.F. Hex Nut. Prior to Serial No. 31001 Use ¾″ N.F. Hex Nut.	4
22.	101,161	Hair Pin, Fork Rod	2
23.	100,463	Thrust Mount Spacer, Light	2
24.	100,464	Thrust Mount Spacer, Medium	2
25.	100,465	Thrust Mount Spacer, Heavy	2
26.	101,217	90° Angle Zerk, ⅛″-90	2
27.	101,216	Snap Ring	2
28.	101,055	Lift Cylinder Mount Pin	1
	101,105	Free Lift Mount Pin	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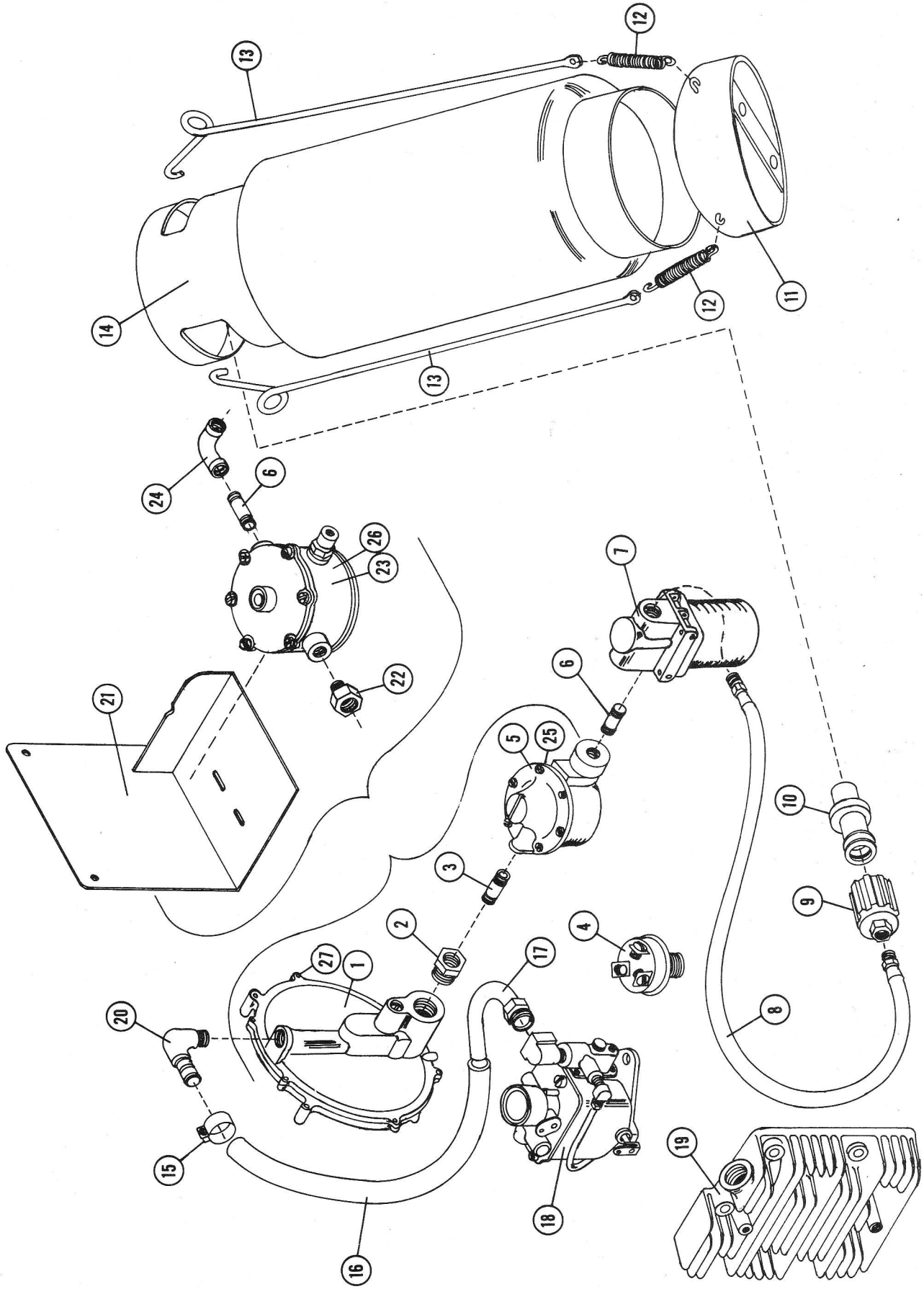
NAMCO

Rear Casting Components

			No. Req'd.
1.	100.005	Rear Platform	1
2.	100.018	Counterweight	1
3.	100,401	Counterweight Pin	2
4.	101,215	5/8" x 6" H.T. Socket Head Cap Screw	2
5.	100,319	Steering Cover Prior to Serial No. 31001 Use No. 100,119	1
6.	100,582	1/4" x 1 1/2" Roll Pin	2
7.	100,583	Steering U-Joint, Lower	1
8.		3/8" x 2 1/2" Hex Head Cap Screw	3
9.	100,329	Lock Ring, Pinion Prior to Serial No. 32017 Use No. 100,112	1
10.	100,714	Needle Bearing Torrington B-1416 Prior to Serial No. 32017 Use No. 100,581 Bushing 7/8" I.D. x 1" O.D. x 1" Long	2
11.	100,324	Pinion Take Up Sleeve Prior to Serial No. 32017 use No. 100,111	1
12.	100,326	Steering Gear Pinion Prior to Serial No. 32017 use No. 100,110	1
13.	100,580	Hub Cap	1
14.	100,707	1"-8 N.C. Castellated Nut	1
15.		1/8" x 1 1/2" Cotter	1
16.	100,145	Washer	1
17.	100,577	Bearing Cone Timken No. 14137A	2
18.	100,578	Bearing Cup Timken No. 14274	2
19.	100,579	Seal C/R 277FF23	1
20.		1/2" x 1" N.C. Hex Head Cap Screw	2
21.	100,301	Rear Wheel Fork Prior to Serial No. 32017 use No. 100,101	1
22.	100,323	Steering Gear Prior to Serial No. 32017 use No. 100,109	1
23.	100,707	1"-8 N.C. Castellated Nut Prior to Serial No. 32017 use 1" N.F. Self Lock Nut Prior to Serial No. 31001 use 100,572 3/4" N.F. Self Lock Nut	1
24.	100,669	Seal C/R 275-W2-M1 Prior to Serial No. 32017 use 100,668 C/R225HD112 Prior to Serial No. 31001 Seal is integral with Bearing	2
25.	100,308	Clamp Flange Side Spacer Prior to Serial No. 32017 use No. 100,306 Prior to Serial No. 31001 use No. 100,106	1
26.	100,577	Bearing Cone Timken No. 14137A Prior to Serial No. 32017 use No. 100,666 Timken No. 15578 Prior to Serial No. 31001 use No. 100,574 Timken No. LM11949L	2
27.	100,578	Bearing Cup Timken No. 14274 Prior to Serial No. 32017 use No. 100,667 Timken No. 15520 Prior to Serial No. 31001 use No. 100,575 Timken No. LM11910	2
28.		5/16" x 1" Hex Head Cap Screw	4
29.	100,322	Lock Ring Prior to Serial No. 32017 use No. 100,108	1
30.	100,708	Rear Tire 9 x 5 x 5 Prior to Serial No. 32017 use 8 1/2 x 4 x 4 Tire Model 15-15 Use No. 100,576 Rubber Model 20-15 Use No. 100,807 Polyurethane	1
	101,175	Neoprene Rear Tire 9 x 5 x 5	
	100,709	Polyurethane Rear Tire 9 x 5 x 5	
31.	100,321	Rear Wheel 5" Prior to Serial No. 32017 use No. 100,320, 4" Prior to Serial No. 31001 use No. 100,120, 4"	1
32.	100,309	Flange Side Spacer Prior to Serial No. 32017 use No. 100,307 Prior to Serial No. 31001 use No. 100,107	1
33.	100,313	Rear Axle Prior to Serial No. 32017 use 1" x 7" HTNF Cap Screw Prior to Serial No. 31001 use 3/4" x 7" HTNF Cap Screw	1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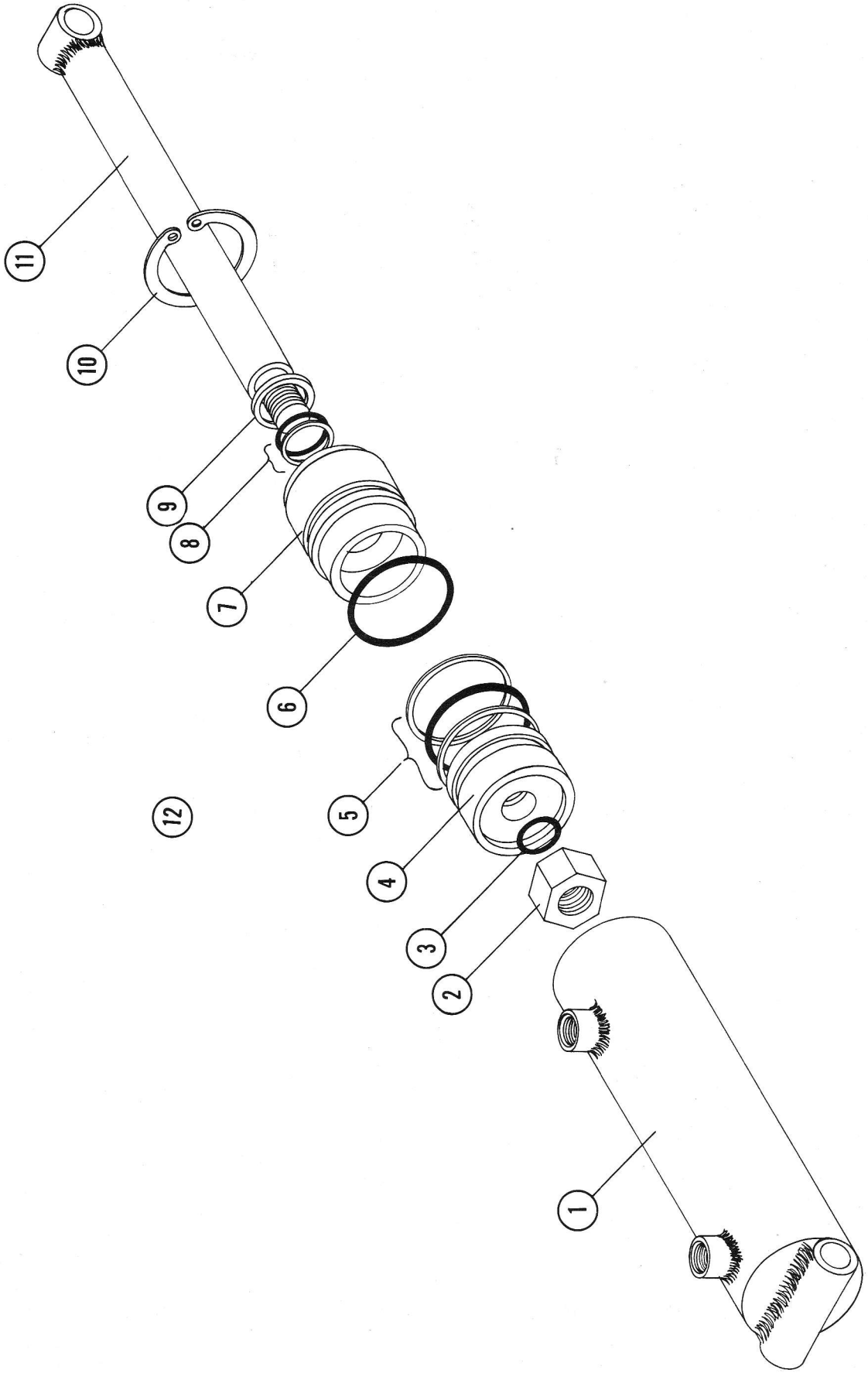
NAMCO
Propane Fuel System

			No. Req'd.
1.	100,727	Secondary Regulator	1
2.	100,769	Reducing Bushing ¾ x ⅜	1
3.	100,771	Nipple ⅜ IPT	1
4.	100,773	Pressure Switch	1
5.	100,741	Primary Regulator	1
6.	100,770	Nipple ¼ IPT	2
7.	100,740	Lock Off Valve	1
8.	100,739	Hose, High Pressure	1
9.	100,737	Rego Coupling, Female	1
10.	100,738	Rego Coupling, Male	1
11.	100,340	Tank Mount	1
12.	100,594	Spring	3
13.	100,344	Hold Down Rod	3
14.	100,745	Propane Tank	1
15.	100,731	Clamp Fuel Hose, Onan #503-27	2
16.	100,732	Fuel Hose, Onan #503A315	1
17.	100,733	Fuel Pipe, Onan #148A147	1
18.	100,734	Carburetor, Propane, Onan #142C372	1
19.	100,735	Head, High Comp, Left, Onan 110D883	1
	100,736	Head, High Comp, Right, Onan 110D884	1
20.	100,772	Hose Connector Elbow ½ x ⅜	1
21.	101,160	Dual Regulator Mount	1
22.	101,082	Adapter ⅜ x ¼ Imperial #120-B	1
23.	101,081	Dual Regulator Bendix #A-806-43	1
24.	100,729	90° Elbow ¼"	1
25.	101,157	Repair Kit, Primary Regulator	1
26.	101,159	Repair Kit, Dual Regulator	1
27.	101,158	Repair Kit, Secondary Regulator	1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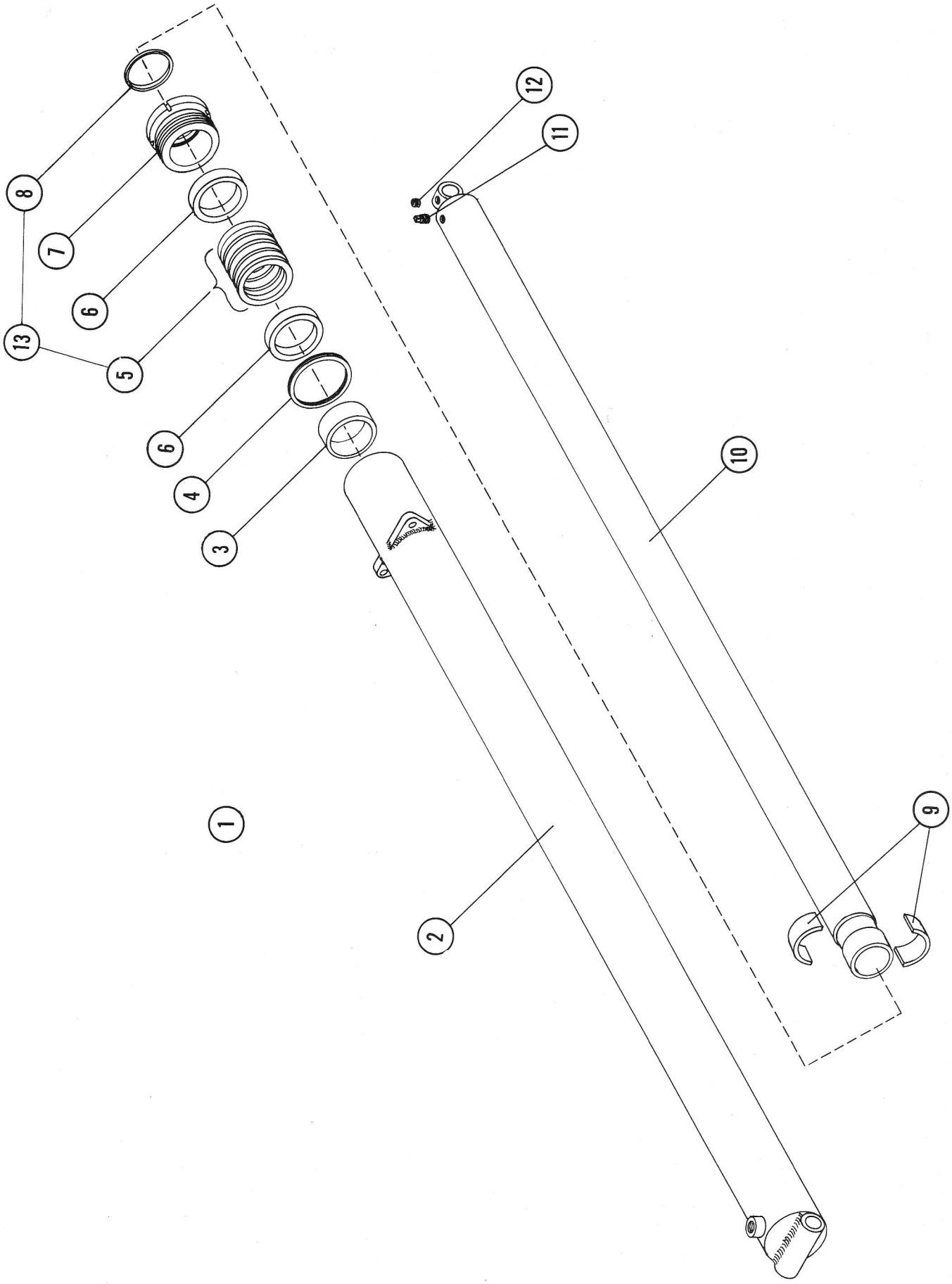
NAMCO
Tilt Cylinder Components

			No. Req'd.
1.	101,044	Case	1
2.	101,045	Nut 1" N.C.	1
3.	101,046	"O" Ring	1
4.	101,047	Piston	1
5.	101,048	Packing, Piston	1
6.	101,049	Seal Gland	1
7.	101,050	Gland	1
8.	101,051	Seal Kit, Ram	1
9.	101,052	Wiper Seal	1
10.	101,053	Snap Ring	1
11.	101,054	Ram	1
12.	100,650	Tilt Cylinder Complete	1
	100,716	Seal Kit, Complete	1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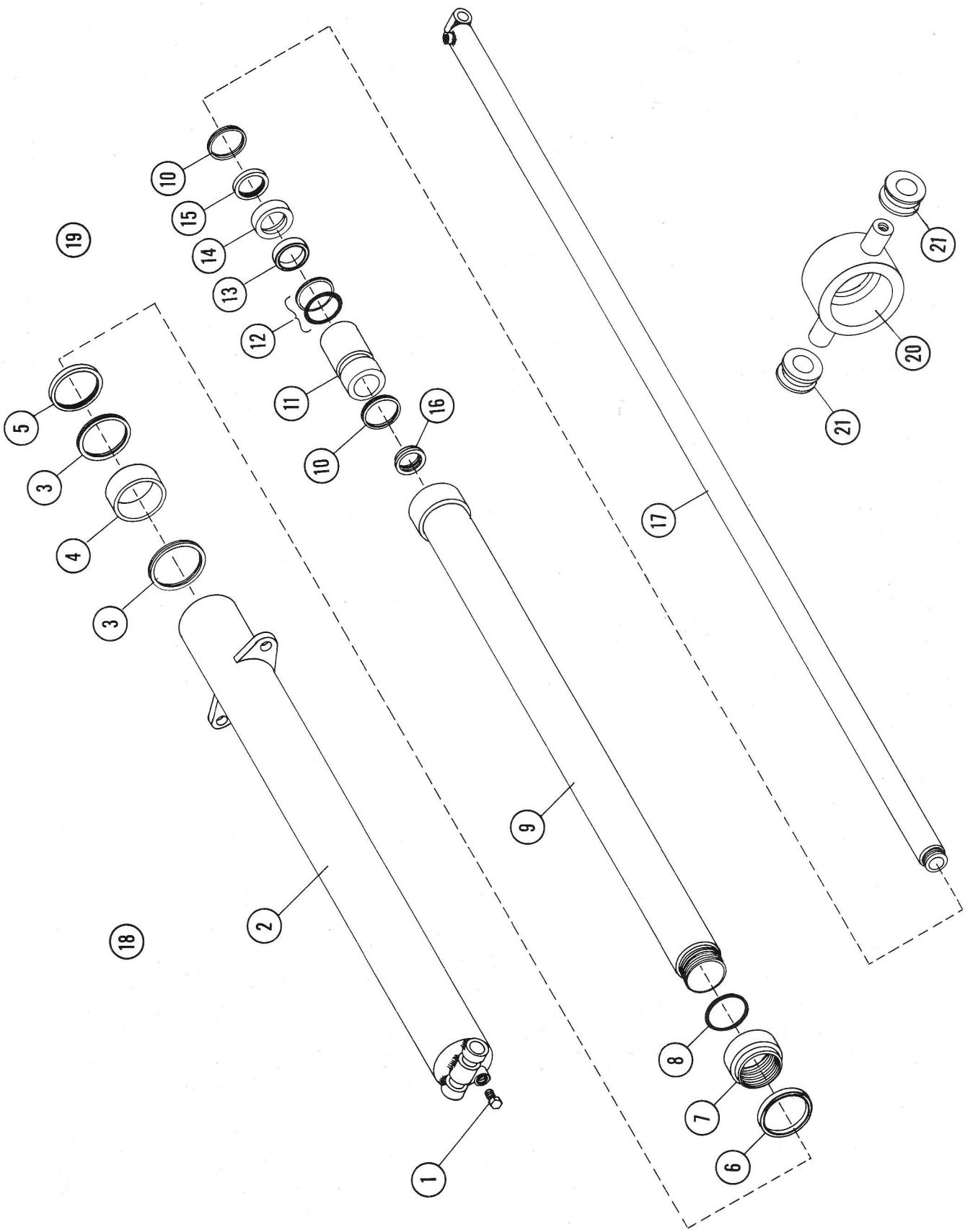
NAMCO

Lift Cylinder Components

IMPORTANT: Due to the different models of lift cylinders used, it is necessary for you to measure the ram diameter of your particular lift cylinder. Listed below are the cylinders for the different lifting heights and ram diameters. Use the appropriate part number and include your lift truck serial number. It is advisable to order the 2¾ ram O.D. if a complete cylinder is purchased.

			No. Req'd.
1.	100,655	88″ Lift Cylinder, 2⅜″ O.D. Ram, Complete Cylinder	1
	100,656	106″ Lift Cylinder, 2⅜″ O.D. Ram, Complete Cylinder	
	100,657	120″ Lift Cylinder, 2⅜″ O.D. Ram, Complete Cylinder	
	100,652	88″ Lift Cylinder, 2¾″ O.D. Ram, Complete Cylinder	
	100,653	106″ Lift Cylinder, 2¾″ O.D. Ram, Complete Cylinder	
	100,654	120″ Lift Cylinder, 2¾″ O.D. Ram, Complete Cylinder	
	101,016	130″ Lift Cylinder, 2¾″ O.D. Ram, Complete Cylinder	
	101,017	144″ Lift Cylinder, 2¾″ O.D. Ram, Complete Cylinder	
2.	101,037	Case, 88″ Life, 2⅜″ O.D. Ram	1
	101,038	Case, 106″ Lift, 2⅜″ O.D. Ram	
	101,039	Case, 120″ Lift, 2⅜″ O.D. Ram	
	101,018	Case, 88″ Lift, 2¾″ O.D. Ram	
	101,019	Case, 106″ Lift, 2¾″ O.D. Ram	
	101,020	Case, 120″ Lift, 2¾″ O.D. Ram	
	101,021	Case, 130″ Lift, 2¾″ O.D. Ram	
	101,022	Case, 144″ Lift, 2¾″ O.D. Ram	
3.	101,220	Spacer, 2¾″ O.D. Ram Use only in 120″, 130″ and 144″ Lifts	1
4.	101,028	Snap Ring	1
5.	101,031	Chevron Packing, 2⅜″ O.D. Ram	1
	101,032	Chevron Packing, 2¾″ O.D. Ram	
6.	101,029	Backing Ring, 2⅜″ O.D. Ram	1
	101,030	Backing Ring, 2¾″ O.D. Ram	
7.	100,891	Packing Nut, 2⅜″ O.D. Ram	1
	100,890	Packing Nut, 2¾″ O.D. Ram	
8.	101,033	Wiper Seal, 2⅜″ O.D. Ram	1
	101,034	Wiper Seal, 2¾″ O.D. Ram	
9.	101,035	Piston, 2⅜″ O.D. Ram	1
	101,036	Piston, 2¾″ O.D. Ram	
10.	101,040	Ram, 88″ Lift, 2⅜″ O.D.	1
	101,041	Ram, 106″ Lift, 2⅜″ O.D.	
	101,042	Ram, 120″ Lift, 2⅜″ O.D.	
	101,023	Ram, 88″ Lift, 2¾″ O.D.	
	101,024	Ram, 106″ Lift, 2¾″ O.D.	
	101,025	Ram, 120″ Lift, 2¾″ O.D.	
	101,026	Ram, 130″ Lift, 2¾″ O.D.	
	101,027	Ram, 144″ Lift, 2¾″ O.D.	
11.		¼″ Iron Pipe Plug	1
12.		¼″ N.C. Allen Head Set Screw	1
13.	100,809	Packing Kit 2¾″	1
	100,715	Packing Kit 2⅜″	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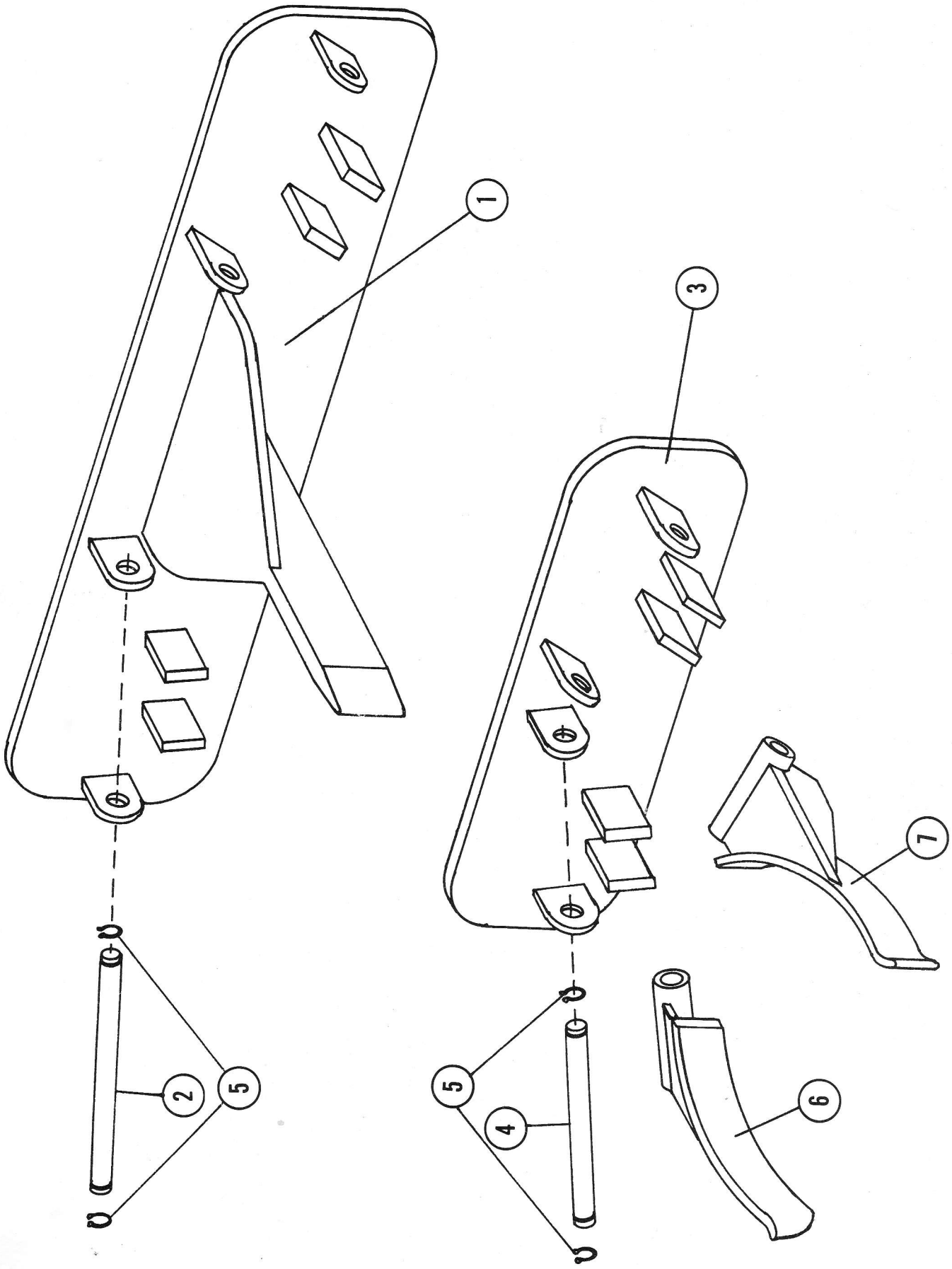
NAMCO
Free Lift Cylinder Components

			No. Req'd.
1.	101,058	Bleeder Plug	1
2.	101,059	Case 43-90	1
	101,060	Case 52-106	
	101,061	Case 58-120	
3.	101,062	Snap Ring	1
4.	101,063	Gland Bearing	1
5.	101,064	Wiper	1
6.	101,065	Piston U-Cup Seal	1
7.	101,066	Piston	1
8.	101,067	Piston "O" Ring Seal	1
9.	101,068	Intermediate Ram 43-90	1
	101,069	Intermediate Ram 52-106	
	101,070	Intermediate Ram 58-120	
10.	101,071	Snap Rng	1
11.	101,072	Gland	1
12.	101,073	Gland Packing	1
13.	101,074	Ram Seal	1
14.	101,075	Spacer Gland	1
15.	101,076	Wiper Seal	1
16.	101,077	Ram Stop	1
17.	101,078	Ram 43-90	1
	101,079	Ram 52-106	
	101,080	Ram 58-120	
18.		Complete Cylinders	
	100,659	63/90/43 Free Lift Cylinder Assy.	1
	100,860	71/106/52 Free Lift Cylinder Assy.	1
	100,861	78/120/58 Free Lift Cylinder Assy.	1
19.	100,885	Packing Kit (3 Tube)	1
	100,884	Packing Kit (4 Tube)	
20.	100,222	Crosshead (3 Tube Cyl.)	1
	100,296	Crosshead (4 Tube Cyl.)	
21.	100,294	Free Lift Sheave	1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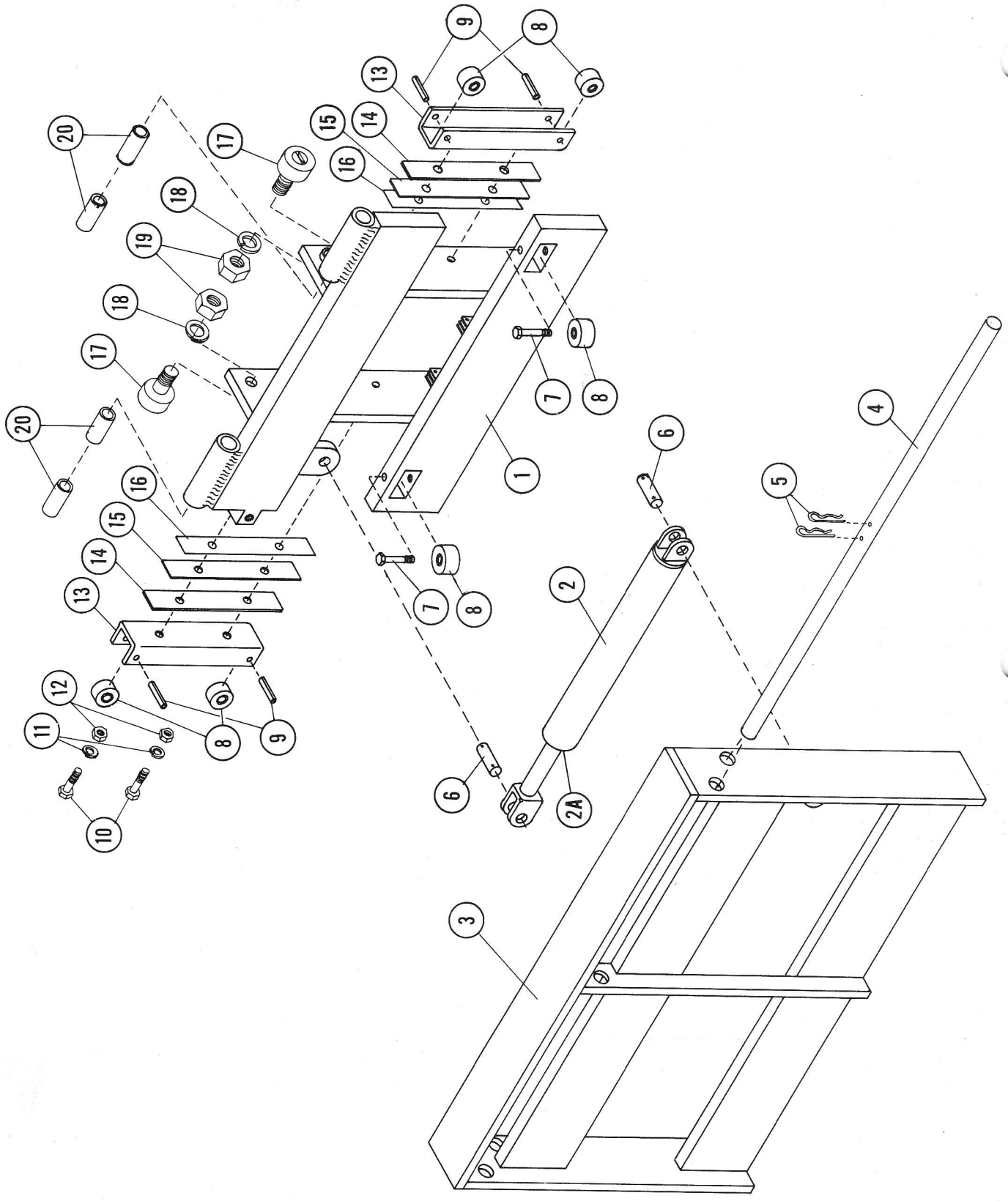
Barrel Booster

			No. Req'd.
1.	100,366	Twin Barrel Booster Back Plate	1
2.	100,363	Pivot Shaft, Twin	2
3.	100,350	Single Barrel Booster Back Plate	1
4.	100,353	Pivot Shaft, Single	2
5.	101,163	Snap Ring, 1½ Truarc 5100-150	4
6.	100,356	Right Lift Arm	1
7.	100,357	Left Lift Arm	1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Side Shifting Carriage Components

			No. Req'd.
1.	100,456	Mounting Carriage	1
2.	100,849	Side Shift Hydraulic Cylinder	1
2A.	101,465	Packing Kit, Side Shift Cyl.	1
3.	100,451	Shifting Carriage	1
4.	100,057	Fork Slide Rod	2
5.	101,161	Hair Pin Lock	2
6.	100,470	Mount Pin	2
7.		$\frac{7}{16}$ x 2 N.C. Hex Head Cap Screw	2
8.	100,661	Thrust Bearing McGill CYR 1½ S	6
9.	100,662	Roll Pin $\frac{7}{16}$ x 1¾	4
10.		⅜ x 1½ N.C. Hex Head Cap Screw	4
11.		⅜ Lockwasher	4
12.		⅜" N.C. Hex Nut	4
13.	100,462	Thrust Bearing Mount	2
14.	100,465	Thrust Bearing Spacer, Heavy	2
15.	100,464	Thrust Bearing Spacer, Medium	2
16.	100,463	Thrust Bearing Spacer, Light	2
17.	100,565	Guide Bearing	4
18.		⅞" Lockwasher	4
19.		⅞" N.F. Hex Nut	4
20.		1⅛ O.D. x 1" I.D. x 1¾ Bronze Bushing	4

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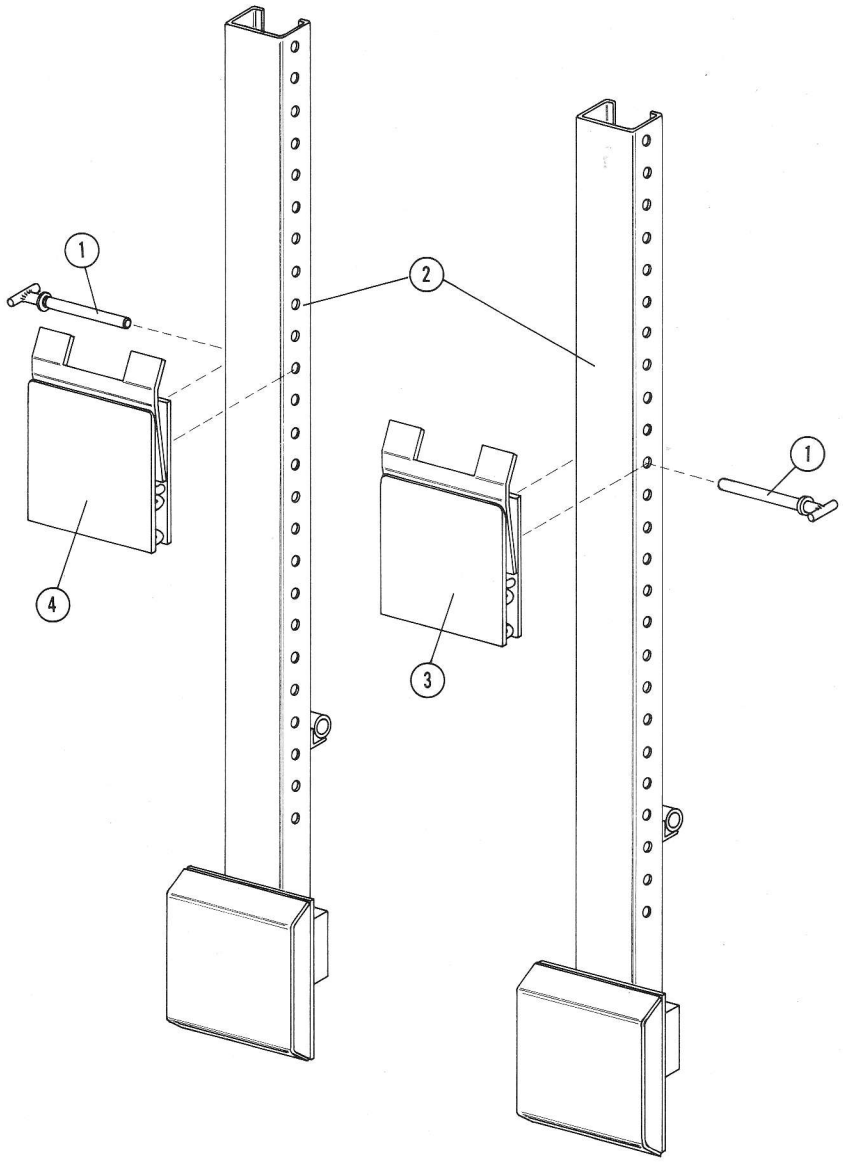
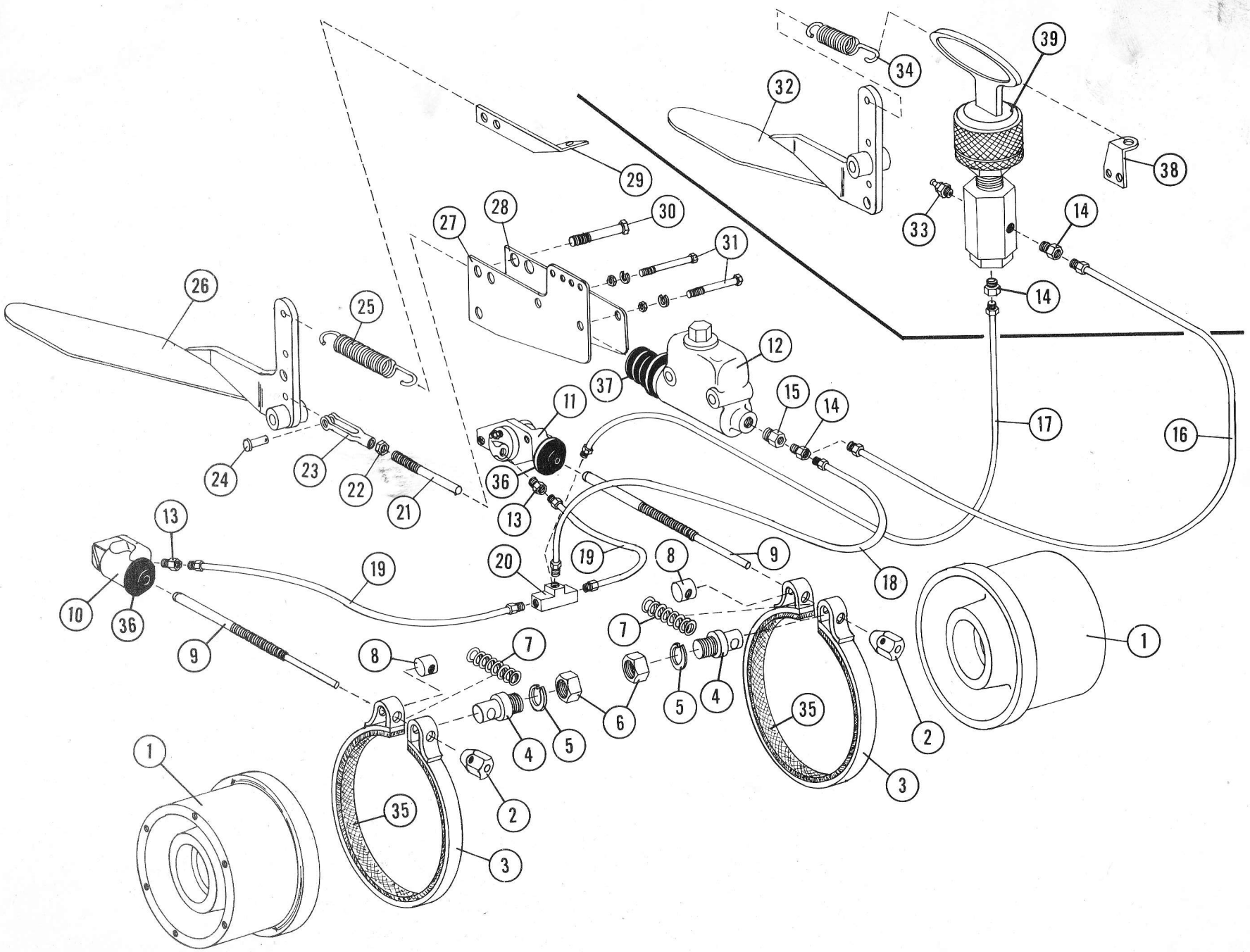
Carton Lift Components



			No. Req'd.
1.	100,392	Mount Pin	2
2.	100,376	Upright Frame	2
3.	100,382	Lift Shoe, Left	1
4.	100,389	Lift Shoe, Right	1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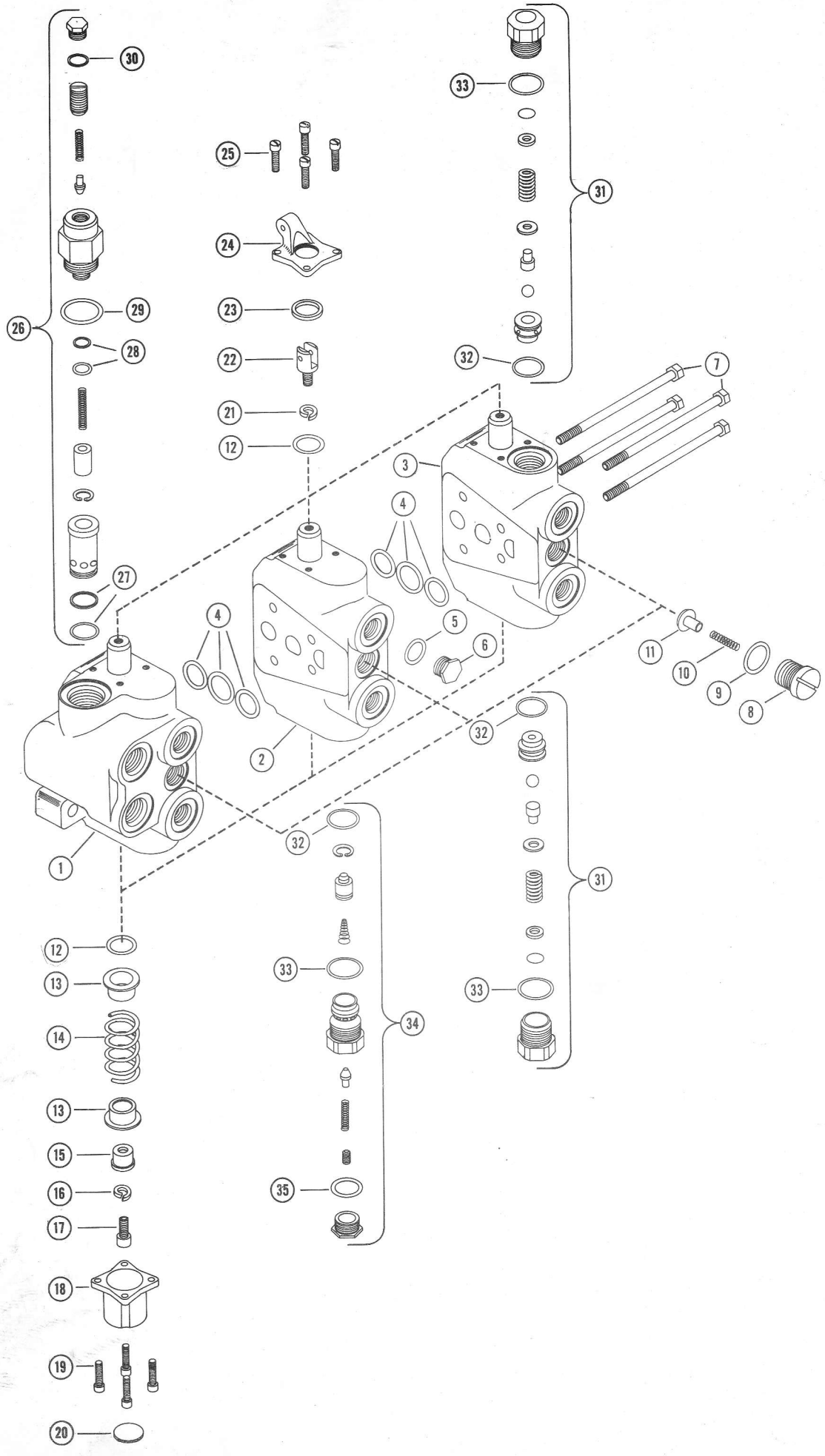
Hydraulic Brake Components

			No. Reqd.				No. Reqd.
1.	101,124	Front Wheel	2	20.	101,226	Union Tee	1
	101,258	Front Wheel Including Tire		21.	101,143	Actuator Rod	1
2.	101,144	Adjustment Nut	2	22.		5/16″-24 thd Hex Nut	1
3.	101,251	Brake Band	2	23.	100,501	Clevis	1
4.	101,134	Anchor Stud	2	24.	101,327	5/16 x 1 Clevis Pin	1
5.		3/4″ Lockwasher	2	25.	101,377	Deadman Spring	1
6.		3/4″-16 thd. Hex Nut	2	26.	101,250	Deadman Foot Pedal	1
7.	101,248	Band Spring	2	27.	101,141	Inner Bracket	1
8.	101,135	Adjustment Stud	2	28.	101,140	Outer Bracket	1
9.	101,139	Adjustment Rod	2	29.	101,285	Deadman Spring Bracket	1
10.	101,171	Right Wheel Cylinder	1	30.		1/2 x 3 Hex Head Cap Screw	1
11.	101,170	Left Wheel Cylinder	1	31.		3/8 x 3 Hex Head Cap Screw	2
12.	101,172	Master Cylinder	1	32.	101,138	Service Brake Foot Pedal	1
13.	101,239	Male Connector 7/16-20 x 3/16 Tube	2	33.	101,230	Bleeder Plug	1
14.	101,225	Male Connector 1/8 IPT x 3/16 Tube	3	34.	101,145	Service Brake Spring	1
15.	101,231	Male Connector 1/2-20 x 1/8 IPT	1	35.	101,252	Brake Lining	2
16.	101,229	Tubing Assy 51″ Long	1	36.	101,399	Wheel Cylinder Repair Kit	1
17.	101,228	Tubing Assy 40″ Long	1	37.	101,401	Master Cylinder Repair Kit	1
18.	101,249	Tubing Assy 30″ Long	1	38.	101,240	Service Spring Bracket	1
19.	101,227	Tubing Assy 12″ Long	2	39.	101,222	Twist Lock Valve	1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Hydraulic Valve Components

Key No.	Part No.	Description	No. Req'd.
	100,504	Hydraulic Valve Assembly	1
1.	**101,593	Drive Motor Valve Section (Includes Spool)	1
2.	**101,594	Lift Valve Section (Includes Spool)	1
3.	**101,595	Tilt Valve Section (Includes Spool)	1
	100,872	Auxiliary Valve Section Double Acting (⅜" x 7½" Cap Screws Req'd.)	1
4.	101,221	Valve Section Seal Kit	2
5.	101,151	Cylinder Port Plug O'Ring #8	1
6.	101,596	Cylinder Port Plug #8	1
7.		⅜" x 5½" Cap Screw	4
8.	101,522	Check Plug	3
9.	101,597	O-Ring #14	3
10.	101,521	Check Spring	3
11.	101,527	Check Poppet	3
12.	100,901	Quad Ring Seal	6
13.	101,525	Stop Collar	6
14.	101,322	Centering Spring	3
15.	101,526	Spool Collar	3
16.	101,598	Spool Assembly Lockwasher	3
17.	101,528	Spool Assembly Screw	3
18.	101,523	Bonnet	3
19.	101,599	Bonnet Screw with Lockwasher	12
20.	101,524	Bonnet Diaphram	3
21.	101,600	Handle Adapter Lockwasher	3
22.	101,005	Handle Adapter	3
23.	100,717	Block Vee Ring C/R 711810	3
24.	100,348	Handle Bracket with Seal 100,717	3
25.	101,601	Handle Bracket Screw with Lockwasher	12
26.	*101,328	Main relief Valve Assembly (Housing No. 1724)	1
	*101,496	Main relief Valve Assembly (Housing No. 3001)	1
27.	*101,602	O-Ring and Seal (Housing No. 1724)	1
	*101,603	O-Ring and Seal (Housing No. 3001)	1
28.	*101,604	O-Ring and Back-up Washer (Housing No. 1724)	1
	*101,605	O-Ring and Back-up Washer (Housing No. 3001)	1
29.	*101,125	Copper Gasket (Housing No. 1724)	1
	*101,494	O-Ring (Housing No. 3001)	1
30.	100,750	Gasket	1
31.	101,329	Tilt Relief Valve Assembly	2
32.	101,319	Inner O-Ring Seal	3
33.	101,606	O-Ring	3
34.	101,318	Lift Relief Valve Assembly	1
35.	101,607	O-Ring	1

** Housings and spools cannot be ordered as separate items. All spools are fitted to individual housings by select hone process at factory.

* When ordering main relief valve or parts for it refer to valve housing number which is located on the drive motor valve section and visible from the right side of truck and behind the mounting pad of the lower bolt.

Warranty

NAM Co. warrants each product of its manufacture to be free from defective material and workmanship if the product is operated and serviced according to the manufacturer's instruction manual.

This warranty is in effect for 90 days from date of purchase or for 300 operating hours as indicated on the engine hour meter, whichever shall come first.

NAM Co. obligation under this warranty is limited to repair or replacement of parts ONLY which have been returned to the NAM Co. factory freight prepaid, and after inspection, are deemed by NAM Co. to be defective. The warranty obligation is in no way to be construed to include labor or other miscellanous costs or loss or damages incurred directly or indirectly from the use of the NAM Co. products.

This warranty shall not apply to component parts which are warranted separately by their respective manufacturers.

Neither shall this warranty apply to any parts or components which are expendable and are expected to wear out in normal service during the course of this warranty.

This warranty supersedes all other warranties, expressed or implied, and no person, agent or dealer is authorized to give any other warranties on behalf of the manufacturer.

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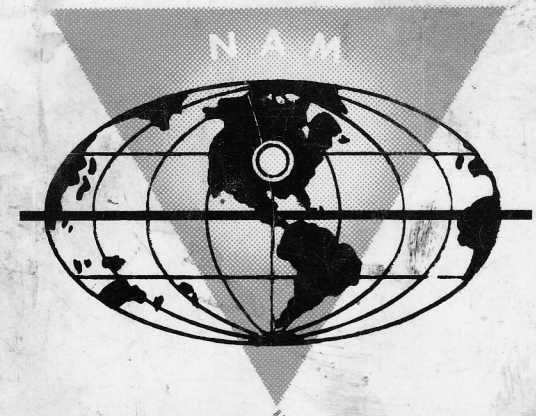

FORK LIFT