

**S/N 5259**

**CONDOR**

**OPERATOR'S**

**MAINTENANCE**

**AND**

**PARTS MANUAL**

*Model 46Q8*

## PREVENTATIVE MAINTENANCE INSPECTION

This field inspection list provides for a systematic inspection of the Condor. The items listed to be inspected or checked daily will basically ensure a good, safe unit performance prior to start-up work operation. By accomplishing these inspections on a daily basis, any potential malfunction will be identified and detected before it expands into a major problem. The 50-hour inspection will detect any defective, damaged or improperly secured part.

The 50-hour time interval is for normal operation. Should the unit be subjected to extensive use, or if the application involves operation in abnormal environmental conditions, then the inspections should be made more often.

It is suggested that a maintenance log be kept and abnormal conditions or items of any kind should be recorded.

### Daily Inspection

#### A. VISUAL

##### Overall Condition

Inspect platform, boom, turret and carriage to make certain that no physical damage is evident. Look for missing components, loose parts, etc.

##### Tire Condition

Inspect tires for wear, cuts and proper pressure (pneumatic filled only).

##### Battery Cable Connections

Inspect for looseness and corrosion of terminals.

##### Hydraulic Fluid Leaks

Inspect to ensure that there is no evidence of fittings or hoses leaking.

##### Main Electrical Connections

Inspect harness connections at rear of ground box and at platform console to ensure that they are tight.

#### B. FLUID CHECK LEVEL

##### Engine Oil Level

If low, add as recommended by engine manufacturer in required quantity.

##### Engine Coolant Level

Add as required (water-cooled engine only).

##### Fuel Tank Level

Check level.

##### Hydraulic Tank Level

If low, add Shell Tellus T32 as required.

##### Battery Electrolyte Level

Add as required.

3. **BATTERIES**

- A. Electrolyte level - all caps present.
- B. Cables and connections - ground connection.
- C. Battery hold-down.

4. **ENGINE**

- A. Fuel level.
- B. Oil level.
- C. Mounting.
- D. Check for fuel, oil leaks.

5. **HYDRAULIC SYSTEM**

- A. Hydraulic leaks.
- B. Loose or damaged hoses, tubing.
- C. Fluid level, hydraulic tank breather cap. Refill only with Shell Tellus T32 hydraulic fluid.
- D. Hydraulic valves and control levers.
- E. Cleanliness of hydraulic fluid - non-milky, bright in color.

6. **MULTI-AXIS 5° SLOPE SENSOR**

- A. General condition.
- B. Loose or damaged wires.
- C. Push to test. Moveable on mounting.
- D. Warning light/alarm in platform is operable.

**KNOW THE UNIT AND ITS CAPABILITIES.** Report any unusual operation, erratic sway or motion of boom or platform while being operated, excessive, unusual noise, abnormally slow or fast operation.

**CAUTION**

Defective components, structural damage, missing parts or equipment malfunctions jeopardize the **SAFETY** of the operator and other personnel and can cause extensive damage to the Condor. **A POORLY MAINTAINED** machine could become the greatest **OPERATIONAL HAZARD** you may encounter.

## LUBRICATION

### 5. ROTATION GEAR BOX

- Lubricant..... S.A.E. 90 weight EP oil.
- Time Interval..... Check every 50 hours. Change every 500 hours of operation or yearly, whichever comes first.
- Procedure..... Remove drain plug. Refill until level reaches about 1 inch from top of fill hole.

### 6. DRIVE TORQUE HUBS

- Lubricant..... S.A.E. 90 weight EP oil.
- Time Interval..... Check periodically and fill, as required. Change every 500 hours or yearly, whichever comes first.
- Procedure..... To check level, rotate wheel so that level plug is horizontal. Remove plug. If steady flow of oil pours forth, unit is sufficiently full.

### 7. HYDRAULIC SYSTEM - KEEP SYSTEM CLEAN

- Fluid Level..... Check level daily. Maintain fluid level at full mark on dipstick with the unit in fully retracted position.
- Hydraulic Oil Filters..... Change return line filter located in hydraulic tank after the first 30 days or 50 hours of operation. Thereafter change the filter every 3 months or 300 hours of operation.
- Tank Breather..... Clean every 50 hours of operation. Remove from tank and clean with solvent. Air blow dry.
- Hydraulic Tank..... Drain oil tank every 500 hours or yearly, whichever comes first and replace filter element. Add oil to tank to required level.

### **NOTE**

Use only **SHELL TELLUS T32** or equal. **DO NOT MIX** hydraulic oil.

It may be necessary to lubricate or service the hydraulic system more frequently when operating in abnormal environments such as dusty conditions.

PARTS SECTION

INDEX (Cont'd.)

| <u>Figure</u> | <u>Title</u>                      |
|---------------|-----------------------------------|
| 27            | Topping Cylinder                  |
| 28            | Platform Rotation Cylinder        |
| 30            | Platform Assembly                 |
| 31            | Platform Control Console Assembly |
| 32            | Platform Skirt                    |
| 33            | Platform Fork                     |
| 35            | 180° Platform Rotation Assembly   |
| 35A           | Platform Non-Rotation Assembly    |
| 39            | Four-Wheel Drive (Option #35543)  |

ELECTRICAL

HYDRAULIC

MODEL

46Q8 (1/12/90)

SIZE

E /

DESCRIPTION

35540 (GAS)

DATE

REV

DESCRIPTION

SIZE

DATE

35784 (2WD) S/N 5058~6219

35399 (2WD) S/N 6221~

36455 (2WD) S/N 5730  
WESTERN PACIFIC 3/10/88

36588 (2WD) S/N 15380, 15826

REF ONLY

C/A

C/B

C/A

C/A

C/B

FIGURE 21A BOOM ASSEMBLY (3-SECTION BOOM)

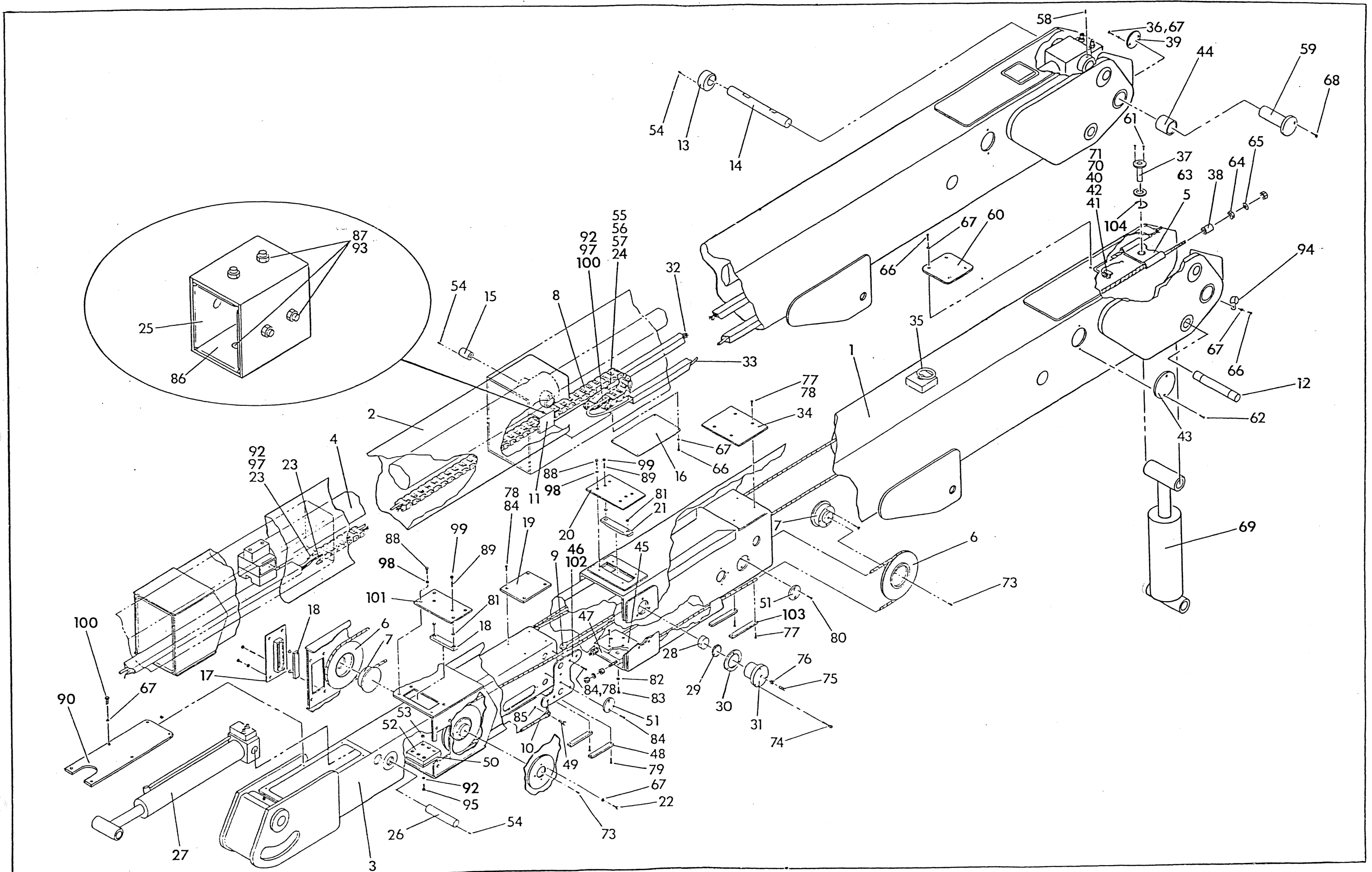


FIGURE 1 FINAL ASSEMBLY (2-Section Boom)  
TOP-MOUNTED PLATFORM OPTION

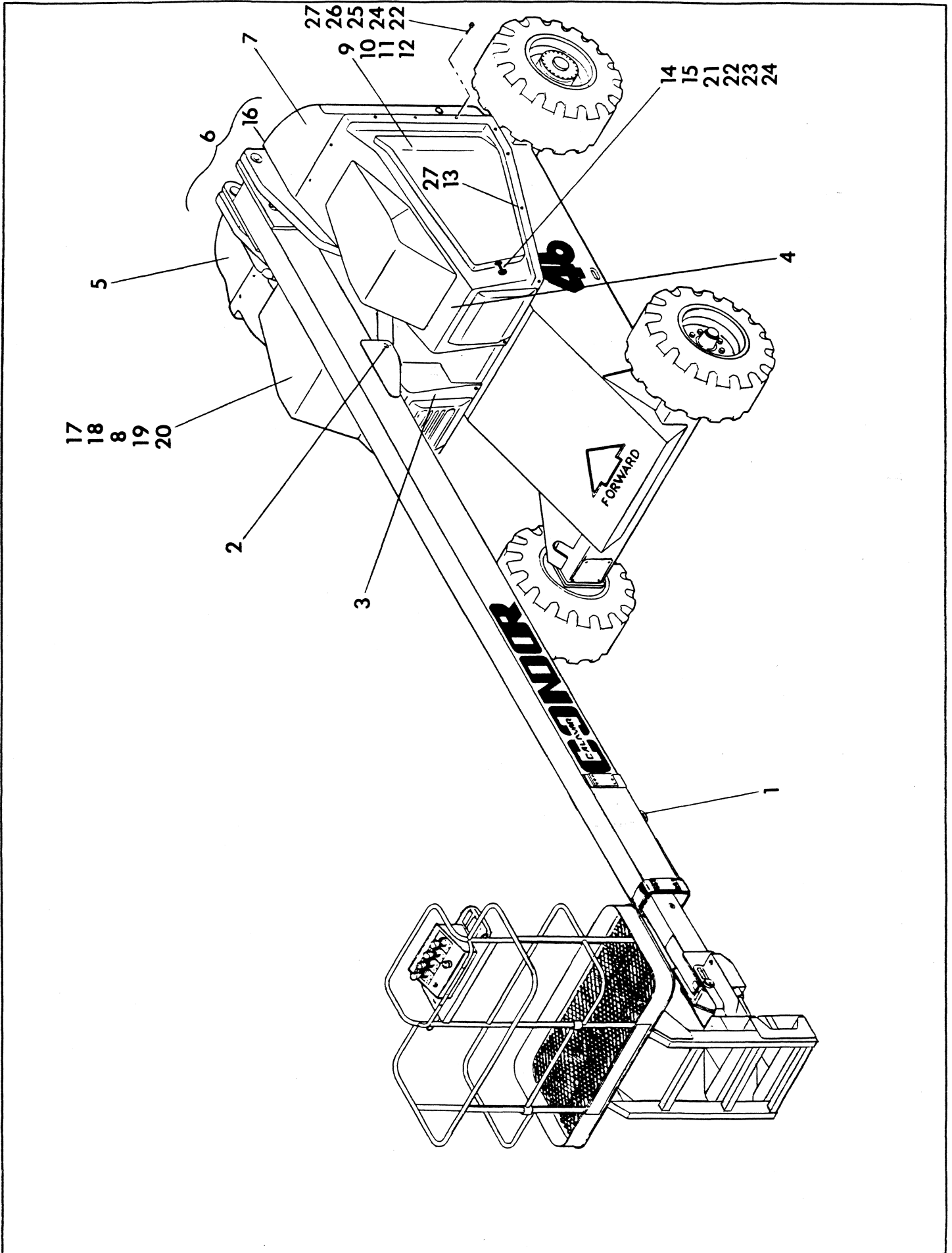




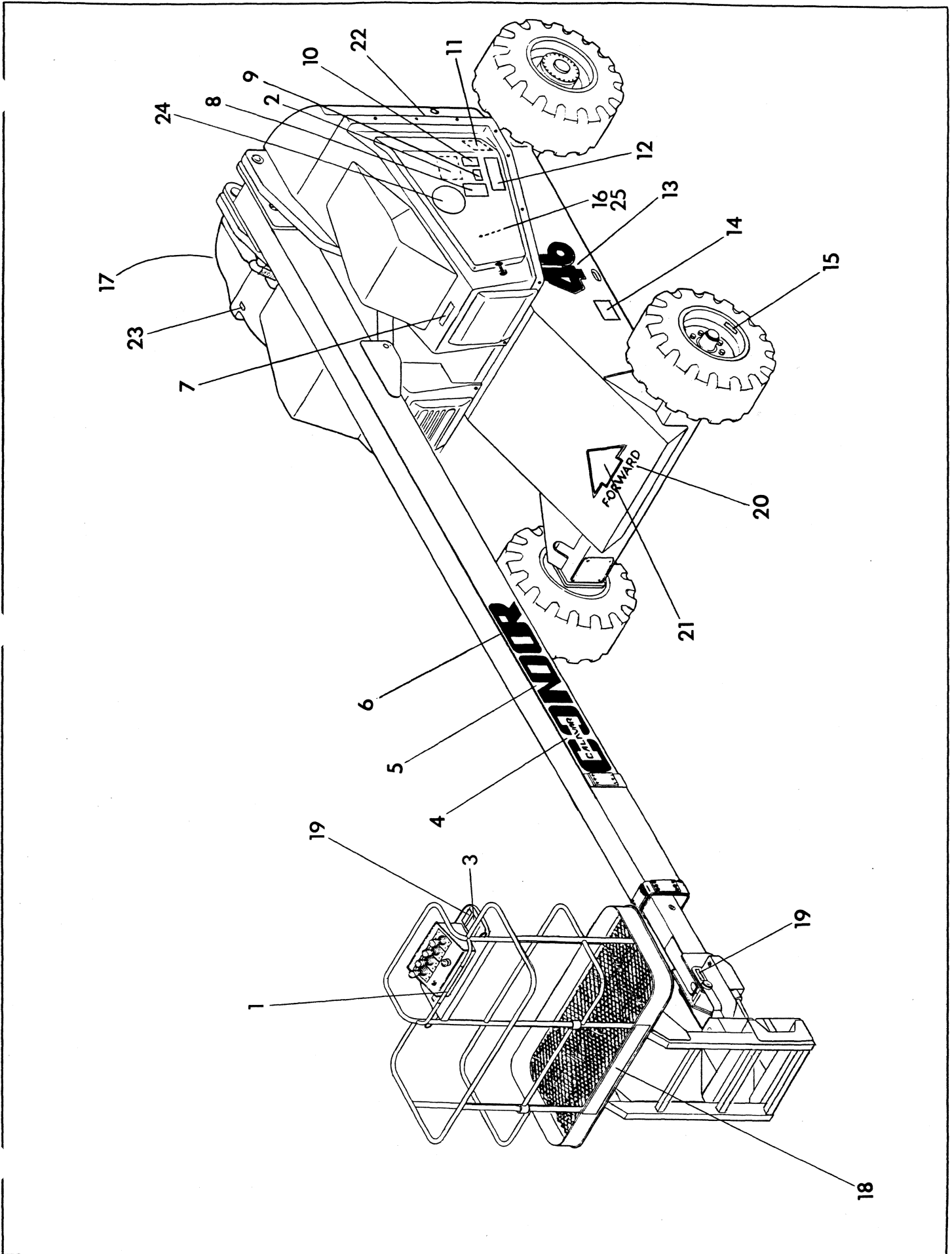
FIGURE 1 FINAL ASSEMBLY (2-Section Boom)  
TOP-MOUNTED PLATFORM OPTION

| REF | DESCRIPTION                                 | PART NUMBER | QTY |
|-----|---|-------------|-----|
| 1   | Tie-Down Ring                               | 32536       | 1   |
| 2   | Pin, Topping Cylinder to Boom               | 68241       | 1   |
| 3   | Cover, Turret - Left Front                  | 35053       | 1   |
| 4   | Cover, Turret - Right Front                 | 35054       | 1   |
| 5   | Cover, Turret - Left Rear                   | 35055       | 1   |
| 6   | Fiberglass Turret Cover Assembly            | 35060       | 1   |
| 7   | Cover, Turret - Right Rear                  | 35056       | 1   |
| 8   | Hinge, Top Hatch                            | 35581       | 1   |
| 9   | Hatch, Door - Right                         | 35058       | 1   |
| 10  | Hatch, Door - Left                          | 35059       | 1   |
| 11  | Hinge, Piano                                | 33017       | 2   |
| 12  | Rivet, Pop - 3/16" Dia.                     | BOW34192    | 58  |
| 13  | Screw, Hex Hd. Cap 3/8" x 3/4" Self-Tapping | BOW31846    | 17  |
| 14  | Latch, Turret Cover                         | LBL00200    | 2   |
| 15  | Bracket, Latch                              | LBL00256    | 3   |
| 16  | Cover, Rear Center                          | 35057       | 1   |
| 17  | Latch, Hood                                 | LBL00210    | 1   |
| 18  | Hatch, Top                                  | 35061       | 1   |
| 19  | Spring, Gas                                 | 35376       | 1   |
| 20  | Gas Spring Bracket Assembly                 | 35377       | 2   |
| 21  | Plate, Backing                              | 32843       | 6   |
| 22  | Screw, Hex Hd. Cap 1/4"-20UNC x 1" Lg.      | BOW30004    | 22  |
| 23  | Flatwasher, 1/4"                            | BOW31431    | 12  |
| 24  | Lockwasher, 1/4"                            | BOW36725    | 22  |
| 25  | Clip, Speednut 1/4"-20UNC                   | BOW432      | 10  |
| 26  | Washer, Fender 1/4"                         | BOW32572    | 10  |
| 27  | Washer, Neoprene 3/8"                       | 35681       | 17  |

FIGURE 2 SAFETY DECAL & PLACARD LOCATION (2-Section Boom)  
TOP-MOUNTED PLATFORM OPTION

| REF | DESCRIPTION                            | PART NUMBER | QTY |
|-----|--|-------------|-----|
| 1   | Decal - WARNING                        | 32200       | 1   |
| 2   | Decal - GENERAL OPERATING INSTRUCTIONS | 35366       | 1   |
| 3   | Decal - PLATFORM CAPACITY              | 35045       | 1   |
| 4   | Decal - CO                             | 21834-1     | 2   |
| 5   | Decal - ND                             | 21834-2     | 2   |
| 6   | Decal - OR                             | 21834-3     | 2   |
| 7   | Decal - NO STEP                        | 32156       | 2   |
| 8   | Decal - CAUTION - AERIAL OPERATION     | 35365       | 1   |
| 9   | Decal - DANGER                         | 21882-3     | 2   |
| 10  | Decal - DANGER                         | 21882-2     | 2   |
| 11  | Placard - Model and Serial Number      | 15843       | 1   |
| 12  | Decal - DANGER                         | 21882-1     | 2   |
| 13  | Decal - 46 QUBIC-8                     | 35040       | 2   |
| 14  | Decal - TRANSPORTING DIAGRAM           | 35041       | 2   |
| 15  | Decal - TIRE PRESSURE 65 PSI           | 21971-3     | 4   |
| 16  | Decal - LUBE FITTING FOR PINS          | 35773       | 1   |
| 17  | Decal - CALAVAR CORPORATION            | 35682       | 1   |
| 18  | Decal - PLATFORM CAPACITY 600 LBS.     | 35805       | 1   |
| 19  | Decal - DO NOT LIFT BOOM               | 21971-2     | 2   |
| 20  | Decal - FORWARD                        | 35043       | 2   |
| 21  | Decal - ARROW                          | 35042       | 2   |
| 22  | Placard - GAS                          | 21849       | 1   |
| 23  | Placard - HYDRAULIC FLUID              | 21850       | 1   |
| 24  | Decal - MADE IN USA - 6-Inch           | 35656       | 2   |
| 25  | Decal - LUBE LOCATIONS                 | 35774       | 1   |

FIGURE 2 SAFETY DECAL & PLACARD LOCATION (2-Section Boom)  
TOP-MOUNTED PLATFORM OPTION

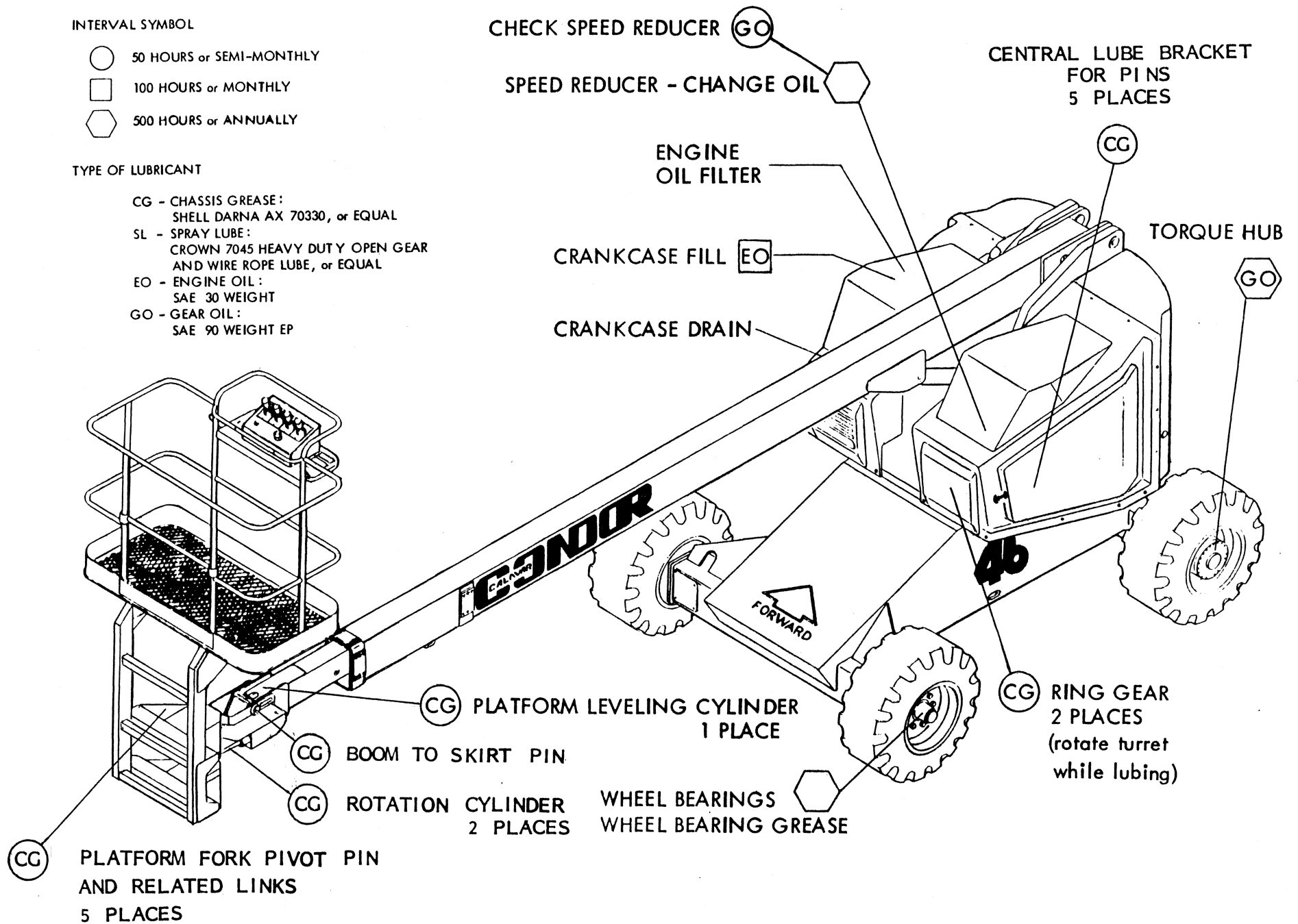


INTERVAL SYMBOL

- 50 HOURS or SEMI-MONTHLY
- 100 HOURS or MONTHLY
- ⬡ 500 HOURS or ANNUALLY

TYPE OF LUBRICANT

- CG - CHASSIS GREASE:  
SHELL DARNA AX 70330, or EQUAL
- SL - SPRAY LUBE:  
CROWN 7045 HEAVY DUTY OPEN GEAR  
AND WIRE ROPE LUBE, or EQUAL
- EO - ENGINE OIL:  
SAE 30 WEIGHT
- GO - GEAR OIL:  
SAE 90 WEIGHT EP



CHECK SPEED REDUCER GO

SPEED REDUCER - CHANGE OIL ⬡

CENTRAL LUBE BRACKET FOR PINS 5 PLACES ○

ENGINE OIL FILTER

CG

CRANKCASE FILL EO

TORQUE HUB

GO

CRANKCASE DRAIN

CG PLATFORM LEVELING CYLINDER 1 PLACE

CG RING GEAR 2 PLACES (rotate turret while lubing)

CG BOOM TO SKIRT PIN

CG ROTATION CYLINDER 2 PLACES

WHEEL BEARINGS  
WHEEL BEARING GREASE

CG PLATFORM FORK PIVOT PIN AND RELATED LINKS 5 PLACES

2-Section Boom

LUBRICATION CHART FOR QUBIC-8 MODEL 46

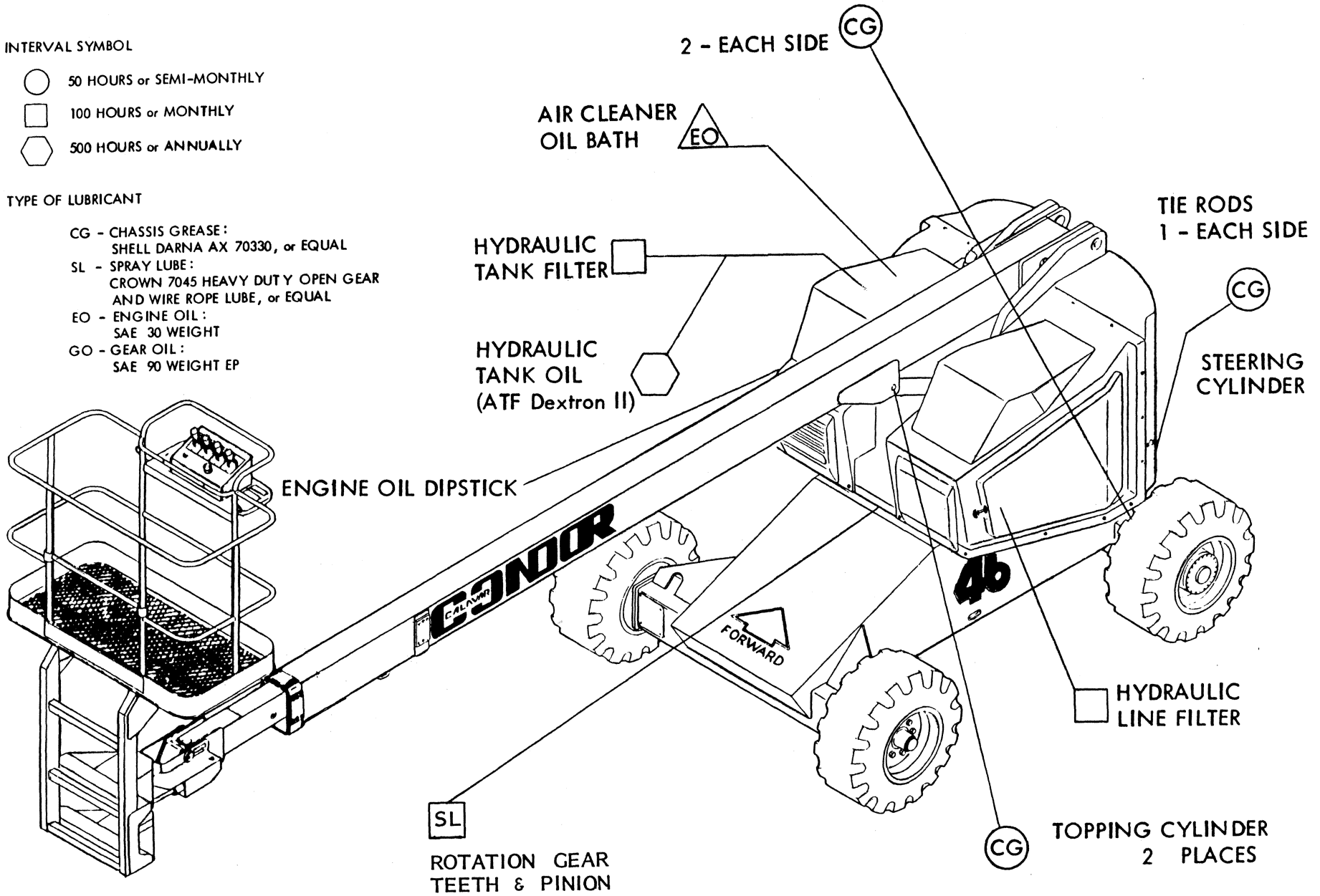
Sheet 1 of 2

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2-Section Boom

LUBRICATION CHART FOR QUBIC-8 MODEL 46

FIGURE 10 TURRET ASSEMBLY

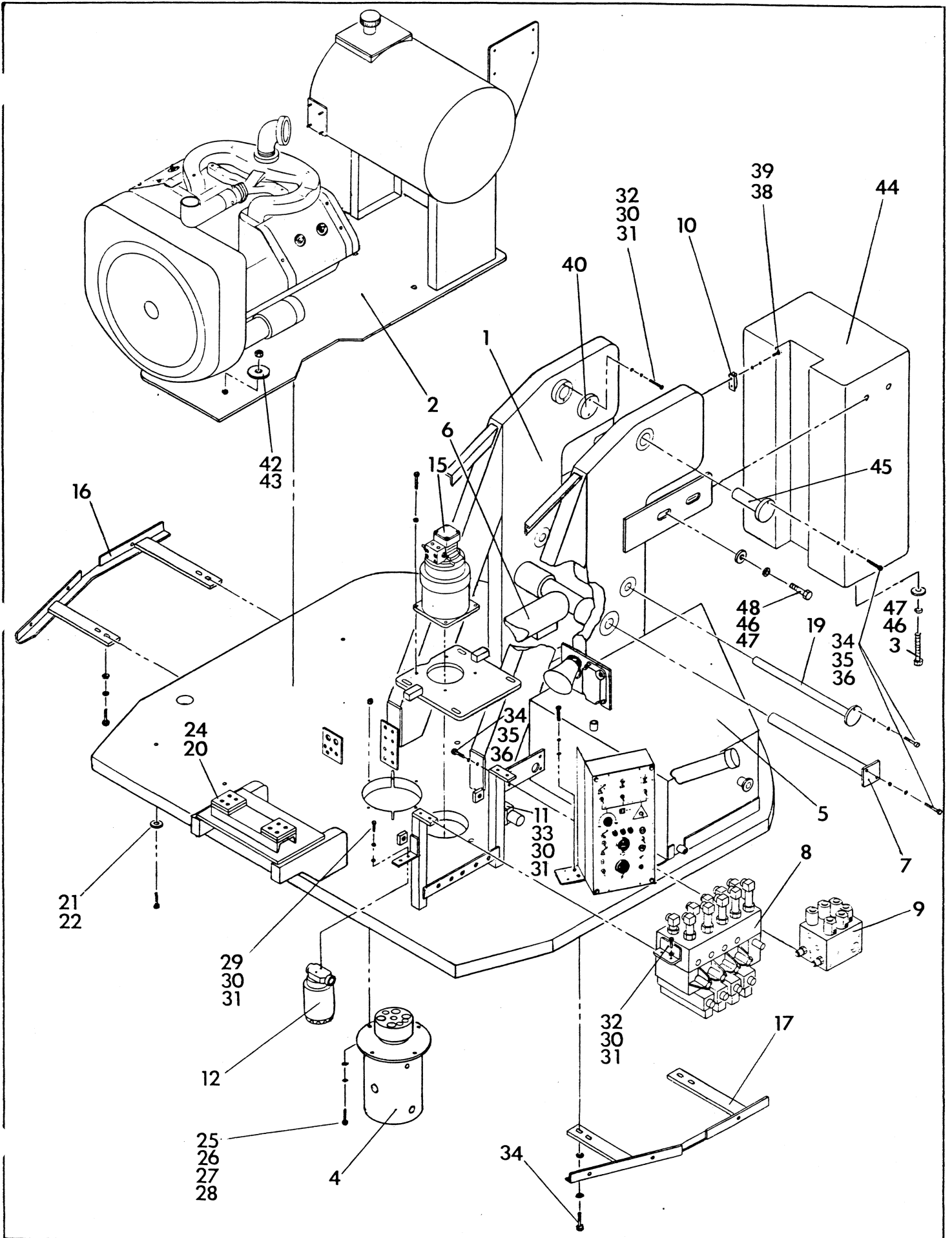
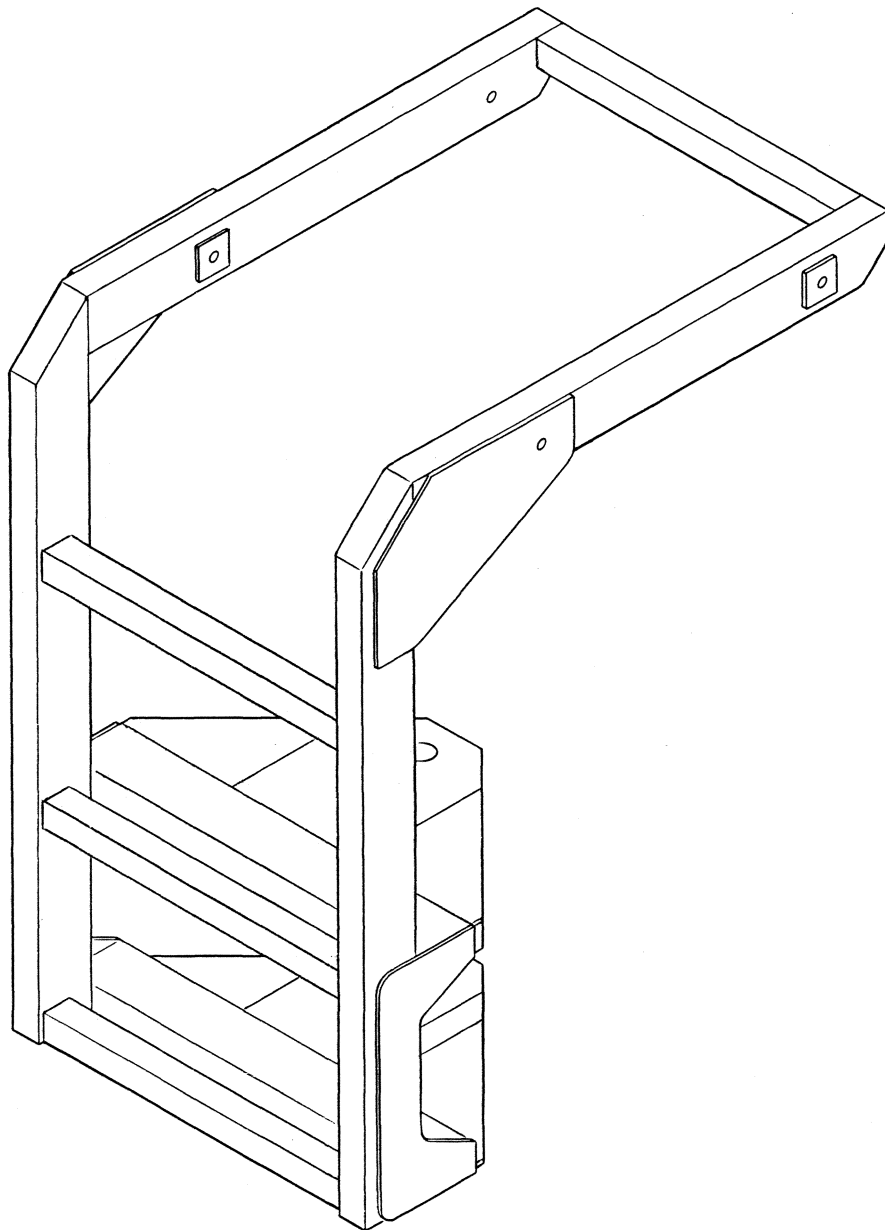


FIGURE 10 TURRET ASSEMBLY

| REF | DESCRIPTION                                 | PART NUMBER     | QTY |
|-----|---|-----------------|-----|
|     | Turret Assembly                             | 35050           |     |
| 1   | Turret Weldment                             | 35796           | 1   |
| 2   | Power Module Assembly                       | Ref. Figure 10A | 1   |
| 3   | Screw, Hex Hd. Cap 1/2"-13UNC x 4" Lg.      | BOW30116        | 3   |
| 4   | Rotary Coupling                             | Ref. Figure 9   | 1   |
| 5   | Fuel Tank Assembly                          | Ref. Figure 14  | 1   |
| 6   | Cylinder, Topping                           | Ref. Figure 27  | 1   |
| 7   | Pin, Topping Cylinder to Turret             | 35013           | 1   |
| 8   | Valve, Proportional Control - 4-Bank        | 32560           | 1   |
| 9   | Valve Assembly                              | 58189           | 1   |
| 10  | Switch, Limit                               | 40207           | 1   |
| 11  | Valve, Solenoid                             | 58079           | 1   |
| 12  | Filter, Return Line                         | 32522           | 1   |
| 13  | Console, Ground Control                     | Ref. Figure 16  | 1   |
| 14  | Harness, Engine                             | 35068           | 1   |
| 15  | Speed Reducer Assembly                      | Ref. Figure 17  | 1   |
| 16  | Mount, Turret Cover - LH                    | 35571           | 1   |
| 17  | Mount, Turret Cover - RH                    | 35572           | 1   |
| 18  | Harness, Valve Wiring                       | 35609           | 1   |
| 19  | Pin, Master Leveling Cylinder to Turret     | 35014           | 1   |
| 20  | Pad, Boom Rest                              | 30324           | 2   |
| 21  | Screw, Hex Hd. Cap 3/4"-10UNC x 4" Lg.      | BOW30160-450    | 4   |
| 22  | Flat Washer, 3/4"                           | BOW31418        | 4   |
| 23  | Nut, Lock 3/4"-10UNC                        | BOW46986        | 4   |
| 24  | Screw, Flat Hd. 3/8"-16UNC x 3/4" Lg.       | BOW34415-750    | 10  |
| 25  | Screw, Hex Hd. Cap 5/16"-18UNC x 2-1/2" Lg. | BOW46035        | 4   |
| 26  | Flat Washer, 5/16"                          | BOW36751        | 4   |
| 27  | Lockwasher, 5/16"                           | BOW36726        | 4   |
| 28  | Nut, Hex 5/16"-18UNC                        | BOW31202        | 4   |
| 29  | Screw, Hex Hd. Cap 1/4"-20UNC x 1/2" Lg.    | BOW30000        | 2   |
| 30  | Lockwasher, 1/4"                            | BOW31325        | 10  |
| 31  | Flat Washer, 1/4"                           | BOW31411        | 10  |
| 32  | Screw, Hex Hd. Cap 1/4"-20UNC x 3/4" Lg.    | BOW30002        | 8   |
| 33  | Screw, Hex Hd. Cap 1/4"-20UNC x 2" Lg.      | BOW30008        | 2   |
| 34  | Screw, Hex Hd. Cap 3/8"-16UNC x 3/4" Lg.    | BOW30052        | 14  |
| 35  | Lockwasher, 3/8"                            | BOW31327        | 22  |
| 36  | Flat Washer, 3/8"                           | BOW31413        | 22  |
| 37  | Screw, Hex Hd. Cap 3/8"-16UNC x 1/2" Lg.    | BOW30050        | 4   |
| 38  | Screw, Round Head #10-32UNF x 1/2" Lg.      | BOW31144        | 2   |
| 39  | Lockwasher, #10                             | BOW31323        | 2   |
| 40  | Plate, Boom Pin                             | 32148           | 2   |
| 41  | Pin, Main Boom Pivot                        | 35012           | 2   |
| 42  | Washer, Motor Mount                         | 35696           | 4   |
| 43  | Nut, Flanged                                | BOW46986        | 4   |
| 44  | Counterweight                               | 35795           | 1   |
| 45  | Pin, Pivot Half - Main Boom                 | 35012           | 2   |
| 46  | Lockwasher, 1/2"                            | BOW31329        | 7   |
| 47  | Flat Washer, 1/2"                           | BOW31415        | 7   |
| 48  | Screw, Hex Hd. Cap 1/2"-13UNC x 2 1/2" Lg.  | BOW30110        | 4   |

FIGURE 33A PLATFORM FORK, TOP-MOUNTED OPTION

| REF | DESCRIPTION   | PART NUMBER | QTY |
|-----|---------------|-------------|-----|
| 1   | Fork Weldment | 35650       | 1   |



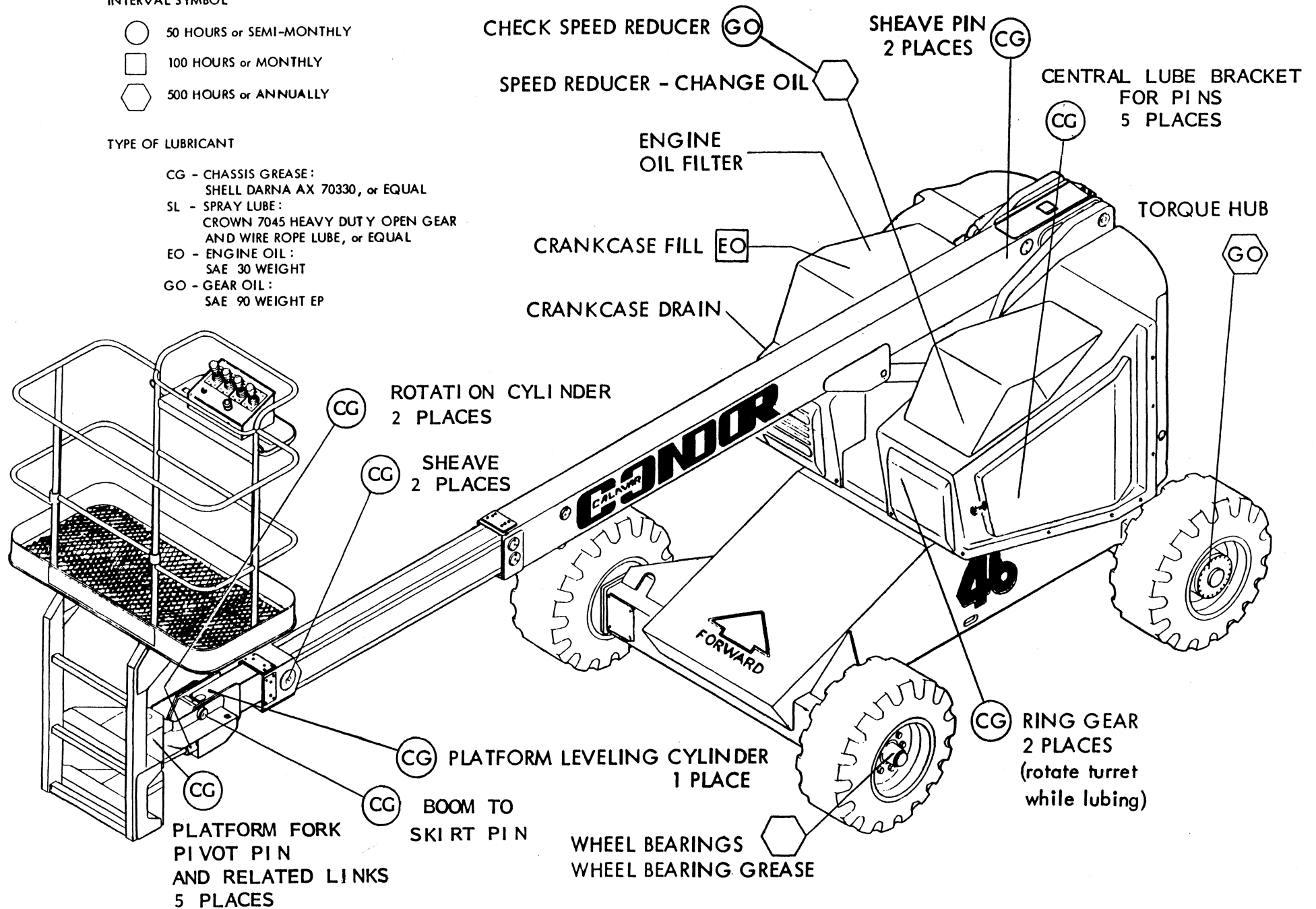


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- SL - SPRAY LUBE:  
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AND WIRE ROPE LUBE, or EQUAL
- EO - ENGINE OIL:  
SAE 30 WEIGHT
- GO - GEAR OIL:  
SAE 90 WEIGHT EP



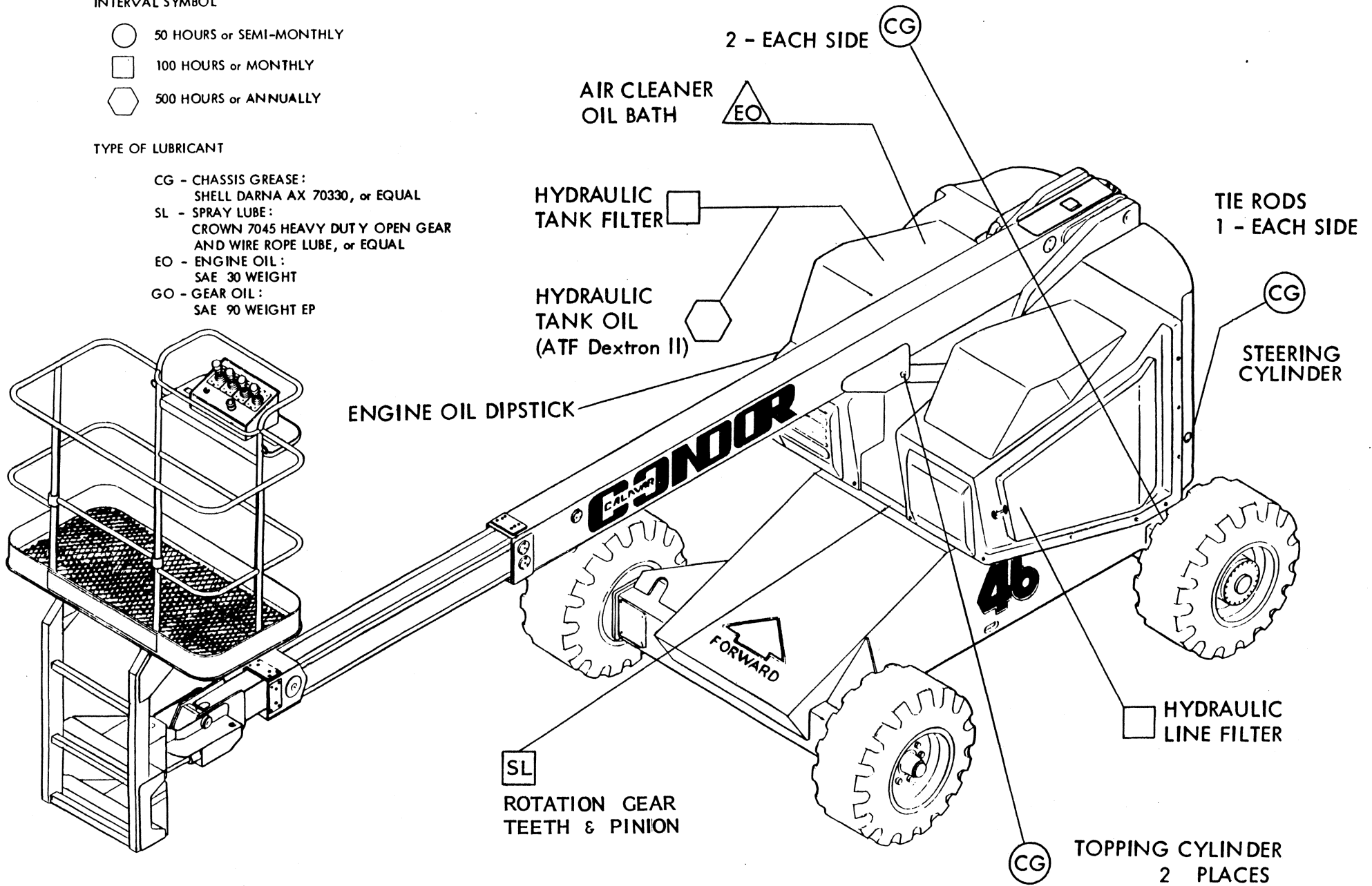
3-Section Boom

INTERVAL SYMBOL

- 50 HOURS or SEMI-MONTHLY
- 100 HOURS or MONTHLY
- ⬡ 500 HOURS or ANNUALLY

TYPE OF LUBRICANT

- CG - CHASSIS GREASE:  
SHELL DARNA AX 70330, or EQUAL
- SL - SPRAY LUBE:  
CROWN 7045 HEAVY DUTY OPEN GEAR  
AND WIRE ROPE LUBE, or EQUAL
- EO - ENGINE OIL:  
SAE 30 WEIGHT
- GO - GEAR OIL:  
SAE 90 WEIGHT EP



3-Section Boom

FIGURE 1 FINAL ASSEMBLY (3-Section Boom)  
TOP-MOUNTED PLATFORM OPTION

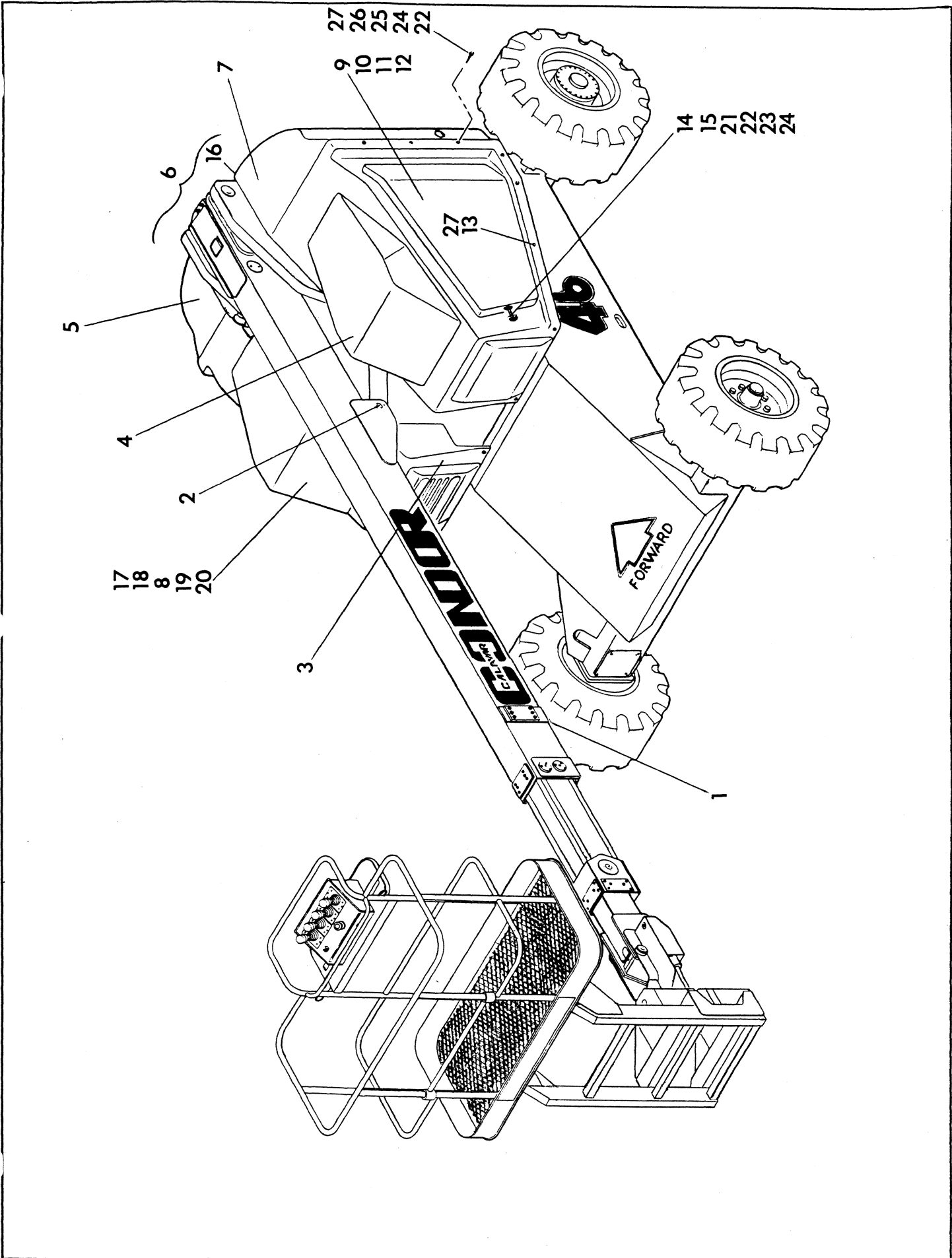


FIGURE 1 FINAL ASSEMBLY (3-Section Boom)  
TOP-MOUNTED PLATFORM OPTION

| REF | DESCRIPTION                                 | PART NUMBER | QTY |
|-----|---|-------------|-----|
| 1   | Tie-Down Ring                               | 32536       | 1   |
| 2   | Pin, Topping Cylinder to Boom               | 68241       | 1   |
| 3   | Cover, Turret - Left Front                  | 35053       | 1   |
| 4   | Cover, Turret - Right Front                 | 35054       | 1   |
| 5   | Cover, Turret - Left Rear                   | 35055       | 1   |
| 6   | Fiberglass Turret Cover Assembly            | 35060       | 1   |
| 7   | Cover, Turret - Right Rear                  | 35056       | 1   |
| 8   | Hinge, Top Hatch                            | 35581       | 1   |
| 9   | Hatch, Door - Right                         | 35058       | 1   |
| 10  | Hatch, Door - Left                          | 35059       | 1   |
| 11  | Hinge, Piano                                | 33017       | 2   |
| 12  | Rivet, Pop - 3/16" Dia.                     | BOW34192    | 58  |
| 13  | Screw, Hex Hd. Cap 3/8" x 3/4" Self-Tapping | BOW31846    | 17  |
| 14  | Latch, Turret Cover                         | LBL00200    | 2   |
| 15  | Bracket, Latch                              | LBL00256    | 3   |
| 16  | Cover, Rear Center                          | 35057       | 1   |
| 17  | Latch, Hood                                 | LBL00210    | 1   |
| 18  | Hatch, Top                                  | 35061       | 1   |
| 19  | Spring, Gas                                 | 35376       | 1   |
| 20  | Gas Spring Bracket Assembly                 | 35377       | 2   |
| 21  | Plate, Backing                              | 32843       | 6   |
| 22  | Screw, Hex Hd. Cap 1/4"-20UNC x 1" Lg.      | BOW30004    | 22  |
| 23  | Flatwasher, 1/4"                            | BOW31431    | 12  |
| 24  | Lockwasher, 1/4"                            | BOW36725    | 22  |
| 25  | Clip, Speednut 1/4"-20UNC                   | BOW432      | 10  |
| 26  | Washer, Fender 1/4"                         | BOW32572    | 10  |
| 27  | Washer, Neoprene 3/8"                       | 35681       | 17  |