Malabar

**MODEL 832R**

aircraft jack

SERIAL NO. 203 & UP

# SERVICE MANUAL

WITH PARTS BREAKDOWN

MALABAR INTERNATIONAL

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# OPERATION AND SERVICE INSTRUCTIONS
# MALABAR MODEL 832R AXLE JACK

**CAUTION: AIRCRAFT MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS MUST BE FOLLOWED. IN THE EVENT OF CONTRADICTION BETWEEN AIRCRAFT MANUFACTURER'S SPECIFICATION AND MALABAR'S, AIRCRAFT MANUFACTURER'S SPECIFICATION WILL PREVAIL.**

## SPECIFICATIONS

| | | |
|---|---|---|
| Rated Capacity | 35 Tons | 31.8 M.T. |
| Low Height | 7 Inches | 178 mm |
| Hydraulic Lift (3 stages) | 12 Inches | 304.8 mm |
| Extension Screw | 3 Inches | 76.2 mm |
| Extended Height | 22 Inches | 558.8 mm |
| Oil Pressure at rated capacity | 6770 PSI | 476 $kg/cm^2$ |
| Safety By-Pass Valve set at | 38 Tons | 34.5 M.T. |
| Hydraulic Fluid | MIL-H-5606 | - |
| Reservoir Capacity | 2 U.S. Gallons | 7.6 Liters |

## GENERAL DESCRIPTION

The Malabar Hydraulic Axle Jack is designed primarily for use in aircraft landing gear maintenance. It consists of a multi-stage cylinder assembly attached to one end of a frame. The pump unit and oil reservoir are mounted on the other end. A high pressure hose, an oil return line and a release shaft assembly connects the cylinder assembly to the operating or front end of the jack. The unit is supported by two swivel casters under the oil reservoir and a spring loaded wheel inside the frame next to the cylinder assembly. The cylinder assembly is raised off the ground by the spring loaded wheel when not under a load. The wheel retracts and the base of the cylinder assembly rests on the ground when load is applied to the plungers. A tow bar is attached to the frame. The jack unit, therefore, may be towed about and easily positioned under the jacking pad.

## PREPARATION FOR USE

1. The jack is shipped fully assembled except for the tow bar. As a safety and spillage precaution, the jack is shipped without hydraulic fluid. Before placing jack in use, remove oil filler cap on top of the reservoir and fill with MIL-H-5606 Hydraulic Fluid or approved alternate. The oil level should only be checked with the jack plungers in the lowered position.

2. Bleed air which may be trapped under the jack plungers and the hand pump by opening the jack release valve and operating the hand pumps a few strokes.

## OPERATION

1. Position Jack Cylinder, with extension screw raised, directly under jacking pad of the aircraft. Make sure that the jack base will rest on a hard level surface when load is applied.

2. To raise the load:
   a. Close the release valve knob.
   b. The jack is equipped with two pumps (Fig. 3). One with a 3/4 inch diameter pump plunger for rapid raising of jack plungers under low pressure and a 7/16 inch diameter pump plunger for high pressure operation. Place the pump handle over the end of the pump fulcrum and operate the pump. Do not raise jack plungers beyond the rated hydraulic lift or lift a load greater than the rated capacity. Avoid lifting with excessive side load on the jack.

3. To lower the load:
   a. Open the release valve knob not more than one and one-half turns counter-clockwise. The speed of lowering is controlled by the amount the release valve is opened.

## SERVICING

Servicing the jack consists mainly of the following:

1. When in use, the reservoir should be kept full with hydraulic fluid. Check with jack fully retracted.

2. Lubricate casters and wheel bearings.

3. Lubricate pump link pins and tow bar pivot.

## INSPECTION

Prior to use of jack:

1. Check operation of hand pumps.

2. Check for excessive oil around pump plungers.

3. Check for oil leakage at valve block, reservoir, cylinder plungers and base.

4. Check hydraulic hose and return line connections for leaks. Tighten as required.

5. Check for loose nuts. Tighten as required.

REPAIR AND REPLACEMENT SCHEDULE:

1. No definite time schedule has been established for the overhaul of the jack or for the replacement of various moving parts. The usage of the jack and the amount of load raised each time materially affect the life of the working parts.

2. When necessary to disassemble jack:
   a. Drain hydraulic fluid from reservoir thru plug at the bottom.

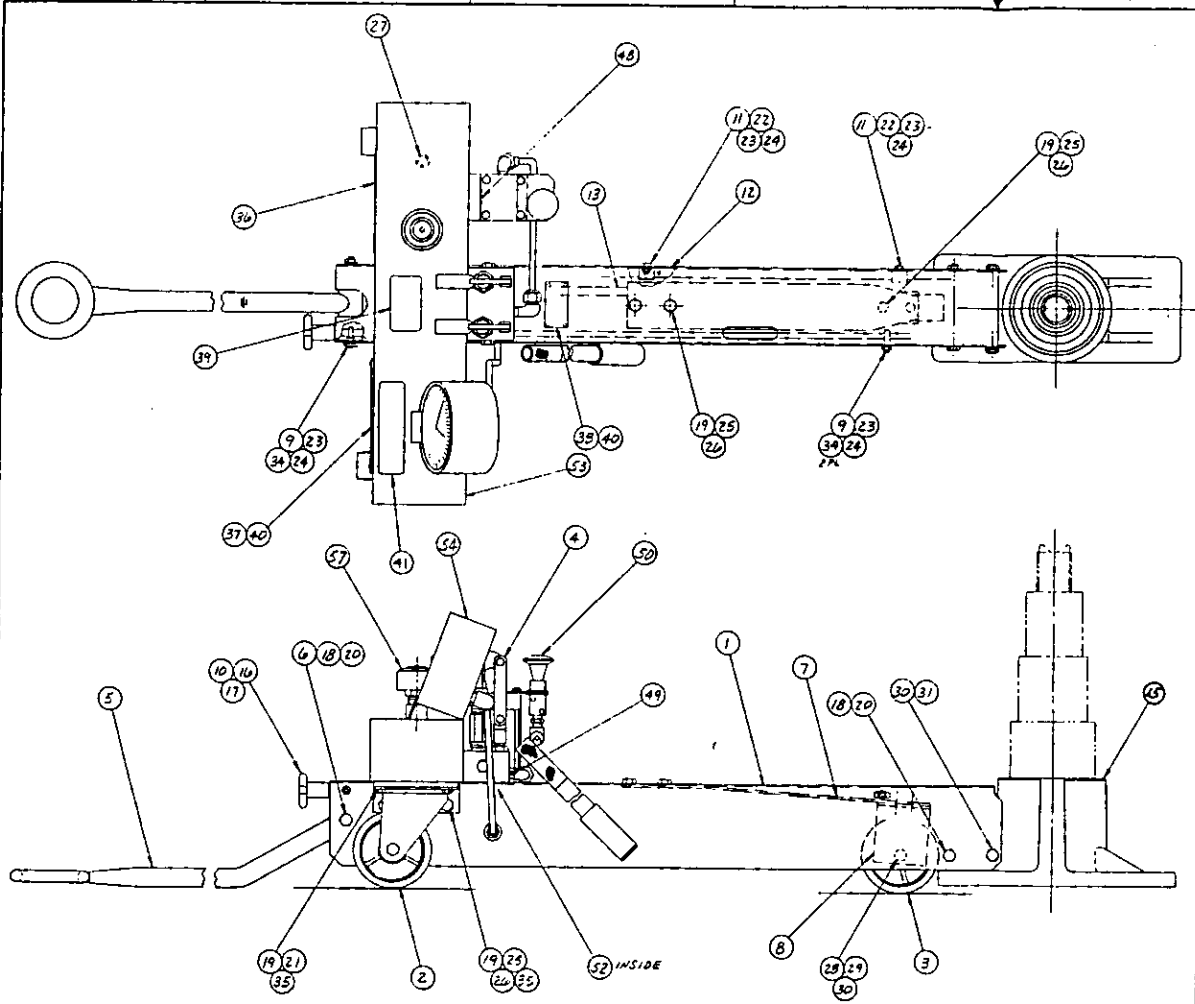
3 Each time the jack is disassembled, inspect for the following:
   a. Interior walls of all plungers and cylinder for rust, pits, scratches and/or excessive wear.
   b. Exterior of plungers for excessive rust and/or excessive wear.
   c. Upper bearings for excessive rust and/or excessive wear of interior walls.
   d. Packings, seals, gaskets for distortion, wear, deterioration or dirt.
   e. Oil Screen located in the valve block for cleanliness.
   f. Valves and valve seats in the hand pump base block for scratches, dents and proper seating of the ball.
   g. All pivot pins for wear, cracks, pits or evidence of damage or pending damage.
   h. All areas for excessive dirt, oil, dust and chips.
   i. Check all threads for condition and cleanliness.
   j. Hose for cuts and distortions.
   k. Replace all defective parts.
   l. Clean all metal parts with clean solvent and dry with compressed air.

4. Lubricate all threads. Use teflon tape carefully on all pipe threads. Remove excess tape - it can clog valves and orifices. If ball valves do not seat properly, they may be reseated by tapping the ball into the valve seat with a brass rod.
   NOTE: The Safety by-pass valve, located in the pump block (Fig. 3), should not be removed unless absolutely necessary. This valve is set to by-pass oil back to the reservoir at 5% over rated capacity.

   If the lead seal is removed from safety bypass valve plug be sure to reseal before placing into service. Rated capacity is 35 tons, Safety valve setting is 38 tons approx.

TESTING

Place the jack in a test fixture and load test with lower plunger fully extended and upper plunger partially extended. If the jack fails to operate properly, check for trouble as indicated in Trouble Shooting Chart. With plungers extended, and supporting the capacity load, allow the jack to stand for 10 minutes. Any excess settling indicates leakage in the pump, check valve, packing seals or gaskets. Check for oil leaks and replace defective parts.




| DWG NO | 832OOR | SH | 1 | REV | H |
|---|---|---|---|---|---|

REVISIONS

| ZONE | REV | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|---|
| | D | ECN 2910, REDRAWN | 10-19-87 | DH |
| | E | ECN 3410 ADDED: ITEM 41 | 9-24-90 | DH RH |
| | F | ECN 3510, CHANGED TO WASH SYSTEM | 3-11-91 | DH |
| | G | SEE ECN 3725 | 3-25-92 | WP DH |
| | H | ECN 3886, ADDED 832OOR-S | 11-30-92 | WP DH |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | 58 | | 83260 | AIR OPER VACUUM RETRACT KIT | OPTIONAL EQUIP |
| - | 1 | 1 | 1 | 1 | 57 | | 80339 | BREATHER / DIPSTICK ASSY | |
| - | 2 | 2 | 2 | 2 | 56 | | 321-042 | HHCS, 3/8-16 × 3/4 LG | |
| | | | | | 55 | | | | |
| 1 | 1 | 1 | - | - | 54 | | 83219 | LOAD GAUGE KIT | OPTIONAL EQUIP |
| - | - | - | 1 | 1 | 53 | | 80216 | RESERVOIR WELDMENT | |
| - | - | - | 1 | 1 | 52 | | 122-007 | ELBOW, 45° | |
| | | | | | 51 | | | | |
| 1 | 1 | - | 1 | - | 50 | | 80218 | AIR PUMP KIT | OPTIONAL EQUIP |
| - | - | 1 | - | 1 | 49 | | 717-035 | PIPE PLUG | |
| - | - | 1 | - | 1 | 48 | | 717-006 | PIPE PLUG | |
| | | | | | 47 | | | | |
| | | | | | 46 | | | | |
| | | | | | 45 | | | | |
| | | | | | 44 | | | | |
| | | | | | 43 | | | | |
| | | | | | 42 | | | | |
| 1 | 1 | 1 | 1 | 1 | 41 | | 75940 | STICKER | |
| 8 | 8 | 8 | 8 | 8 | 40 | | 397-005 | SELF TAPPING SCREW | |
| 1 | 1 | 1 | 1 | 1 | 39 | | 55994 | DECAL, FLUID | |
| 1 | 1 | 1 | 1 | 1 | 38 | | 55997-2 | PLACARD, NAMEPLATE | |
| 1 | 1 | 1 | 1 | 1 | 37 | | 55991-8 | PLACARD, TONNAGE | |
| 1 | 1 | 1 | 1 | 1 | 36 | | 55998 | PLACARD, LOGO | |
| 12 | 12 | 12 | 12 | 12 | 35 | | 362-003 | FLAT WASHER 3/8 | |
| 3 | 3 | 3 | 3 | 3 | 34 | | 362-001 | FLAT WASHER 1/4 | |
| | | | | | 33 | | | | |
| | | | | | 32 | | | | |
| 2 | 2 | 2 | 2 | 2 | 31 | | 321-022 | HEX HD CAP SCR 1/2-20×1" LG | |
| 3 | 3 | 3 | 3 | 3 | 30 | | 363-004 | LOCKWASHER 1/2 | |
| 1 | 1 | 1 | 1 | 1 | 29 | | 351-003 | HEX NUT 1/2-13 | |
| 1 | 1 | 1 | 1 | 1 | 28 | | 321-039 | HEX HD CAP SCR 1/2-13×3" LG | |
| 1 | 1 | 1 | 1 | 1 | 27 | | 717-007 | PIPE PLUG 3/8 MPT | |
| 6 | 6 | 6 | 6 | 6 | 26 | | 351-002 | HEX NUT 3/8-16 | |
| 6 | - | - | - | - | 25 | | 321-011 | HEX HD CAP SCR 3/8-16×1" LG | |
| 4 | 4 | 4 | 4 | 4 | 24 | | 351-001 | HEX NUT 1/4-20 | |
| 4 | 4 | 4 | 4 | 4 | 23 | | 363-001 | LOCKWASHER 1/4 MED | |
| 2 | 2 | 2 | 2 | 2 | 22 | | 321-036 | HEX HD CAP SCR 1/4-20×3/4 LG | |
| 6 | 6 | 6 | 6 | 6 | 21 | | 321-042 | HEX HD CAP SCR 3/8-16×3/4 LG | |
| 2 | 2 | 2 | 2 | 2 | 20 | | 355-009 | NUT, THIN SELF LOC 5/8-11 | |
| 16 | 16 | 16 | 16 | 16 | 19 | | 363-005 | LOCKWASHER 5/8 | |
| 2 | 2 | 2 | 2 | 2 | 18 | | 321-021 | HEX HD CAP SCR 5/8-11×5 1/2 LG | |
| 1 | 1 | 1 | 1 | 1 | 17 | | 331-011 | SETSCREW 1/4-20×1/4 LG | |
| 1 | 1 | 1 | 1 | 1 | 16 | | 83596 | SHAFT ASSY | |
| 1 | 1 | 1 | 1 | 1 | 15 | | 83298 | CYLINDER ASSY | |
| | | | | | 14 | | | | |
| 1 | 1 | 1 | 1 | 1 | 13 | | 83294R | OIL RETURN LINE | |
| 1 | 1 | 1 | 1 | 1 | 12 | | 83295R | HOSE ASSY | |
| 2 | 2 | 2 | 2 | 2 | 11 | | 394-003 | CLIP, PIPE | |
| 1 | 1 | 1 | 1 | 1 | 10 | | 83597 | KNOB | |
| 2 | 2 | 2 | 2 | 2 | 9 | | 80206 | SHAFT GUIDE | |
| 1 | 1 | 1 | 1 | 1 | 8 | | 80207 | BRACKET, WHEEL | |
| 1 | 1 | 1 | 1 | 1 | 7 | | 80208 | SPRING, LEAF | |
| 1 | 1 | 1 | 1 | 1 | 6 | | 80205 | SPACER, TOWBAR | |
| 1 | 1 | 1 | 1 | 1 | 5 | | 80204 | TOWBAR | |
| 1 | 1 | 1 | 1 | 1 | 4 | | 863998 | VALVE BLOCK AND HAND PUMP ASSY | |
| 1 | 1 | 1 | 1 | 1 | 3 | | 83565 | WHEEL | |
| 2 | 2 | 2 | 2 | 2 | 2 | | 83282R | SWIVEL CASTER | |
| 1 | 1 | 1 | 1 | 1 | 1 | | 80215 | FRAME WELDMENT | |
| -5 | -4 | -3 | -2 | -1 | ITEM NO | FSCM NO | PART OR IDENTIFYING NO | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION |
| ATT REQ'D | | | | | | | PARTS LIST | | |

MODEL 832R REF

| | |
|---|---|
| RATED CAPACITY | 35 TONS |
| LOW HEIGHT | 7 INCHES |
| HYDRAULIC LIFT | 12 INCHES |
| SCREW EXTENSION | 3 INCHES |
| EXTENDED HEIGHT | 22 INCHES |
| OIL PRESSURE AT RATED CAPACITY | 6770 P.S.I. |
| SAFETY POP-OFF VALVE SET AT | 38 TONS |
| TEST LOAD | 52.5 TONS |
| RESERVOIR CAPACITY | 2 GAL |

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | 832R | | |
| NEXT ASSY | USED ON | | |
| APPLICATION | | DO NOT SCALE DRAWING | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± DECIMALS ± ANGLES ±. MATERIAL. FINISH.

CONTRACT NO

| APPROVALS | DATE |
|---|---|
| DRAWN Bill Wright | 10-9-87 |
| CHECKED Jim Klein | 10 H 87 |
| ISSUED | |

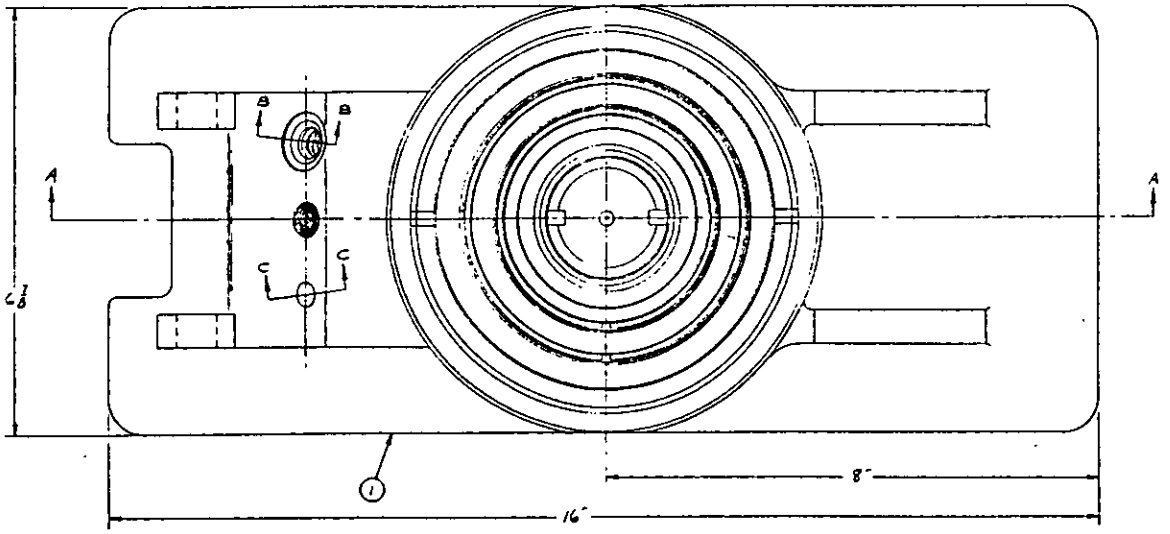
MALABAR

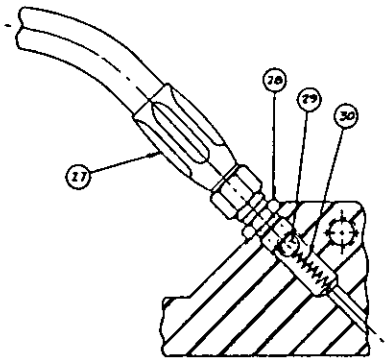
MODEL 832R, 35 TON AXLE JACK

SIZE D | FSCM NO 94861 | DWG NO 832OOR | REV H

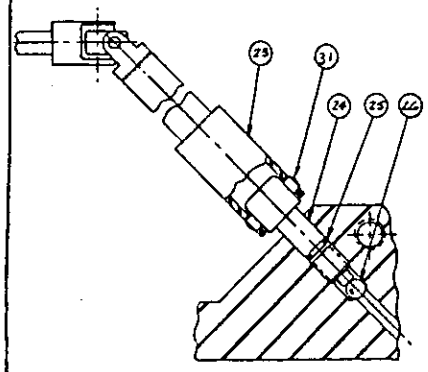
SCALE 1/4 | SHEET 1 OF 1

PAGE 4

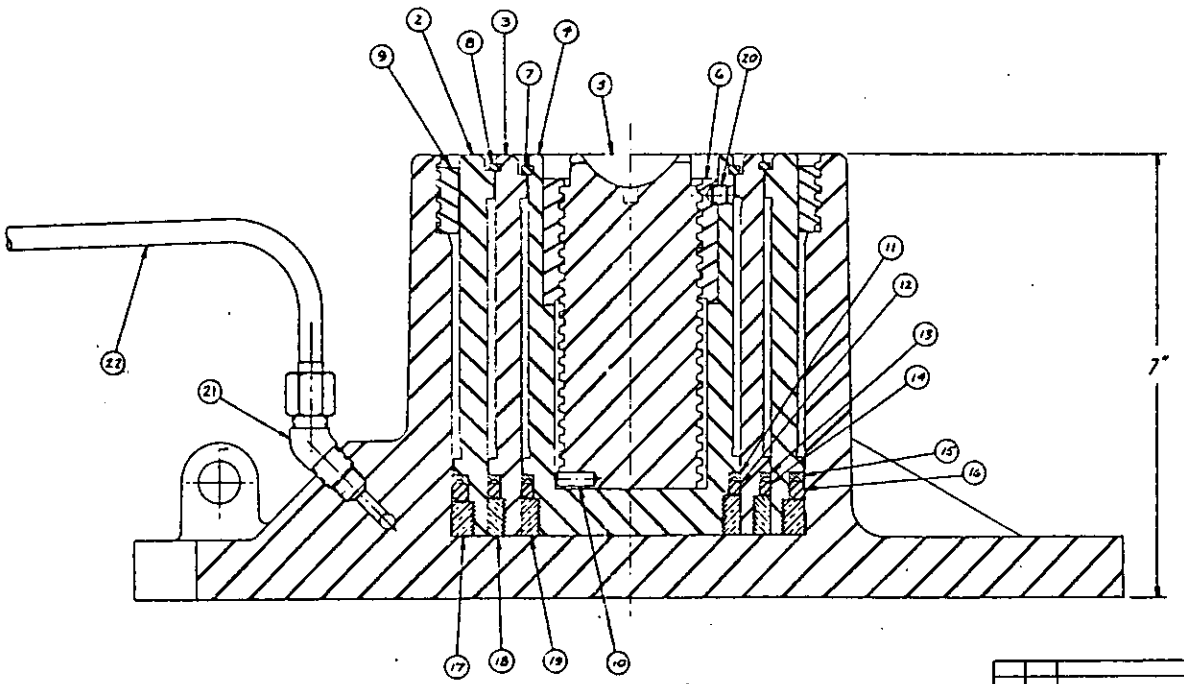



SECTION B-B




SECTION C-C




SECTION A-A

| | |
|---|---|
| RATED CAPACITY | 35 TONS |
| LOW HEIGHT | 7 IN. |
| HYDRAULIC LIFT (3 STAGE) | 12 IN |
| EXTENSION SCREW | 3 IN. |
| EXTENDED HEIGHT | 22 IN. |
| OIL PRESSURE AT RATED CAP. | 6770 P.S.I. |
| SAFETY BY-PASS VALVE SET AT 38 TONS | |

| NO | PART NO | QTY | DESCRIPTION |
|---|---|---|---|
| 31 | 390-001 | 1 | DRIVE PIN |
| 30 | 83515 | 1 | SPRING |
| 29 | 412-001 | 1 | 3/8 DIA. BALL |
| 28 | 83514 | 1 | FITTING |
| 27 | 83295-E | 1 | HOSE TO VALVE BLOCK (REF.) |
| 26 | 412-002 | 1 | 5/16 DIA. BALL |
| 25 | 55925-011 | 1 | "O" RING |
| 24 | 101 | 1 | STEM |
| 23 | 83596 | 1 | RELEASE VALVE SHAFT (REF) |
| 22 | 83294-E | 1 | RETURN LINE TO RES. (REF) |
| | | | 83276 |
| | | | B |
| 21 | 726-009 | 1 | 45° ELBOW |
| 20 | 331-004 | 1 | 5/16-24NF X 5/16 SOC. SET SCREW |
| 19 | 83252-E | 1 | INNER BEARING |
| 18 | 83272-E | 1 | CENTER BEARING |
| 17 | 83312-E | 1 | OUTER BEARING |
| 16 | 55925-451 | 1 | "O" RING (35907-38) |
| 15 | 55903-58 | 1 | BACK-UP RING |
| 14 | 55925-347 | 1 | "O" RING (35907-50) |
| 13 | 55902-50 | 1 | BACK-UP RING |
| 12 | 55925-339 | 1 | "O" RING (55907-42) |
| 11 | 55902-42 | 1 | BACK-UP RING |
| 10 | 371-014 | 1 | ROLL PIN |
| 9 | 83217-E | 1 | STOP RING |
| 8 | 83234-E | 1 | LARGE SNAP RING |
| 7 | 83214-E | 1 | SMALL SNAP RING |
| 6 | 83209-E | 1 | EXTENSION SCREW NUT |
| 5 | 83208-E | 1 | EXTENSION SCREW |
| 4 | 83250-E | 1 | INNER PLUNGER |
| 3 | 83230-E | 1 | CENTER PLUNGER |
| 2 | 83210-E | 1 | OUTER PLUNGER |
| 1 | 83207-E | 1 | BASE/CYLINDER |

| | | | | | |
|---|---|---|---|---|---|
| B | 2-7-64 | SEN 2913 ADDED ITEM 31 | | RF | B-2 |
| A | 8-7-63 | REV. PART NOS. | 832E | MALASKA MFG. CO. SAN LEANDRO, CALIFORNIA | FULL |
| | | | | CYLINDER ASSEMBLY | 83276 |

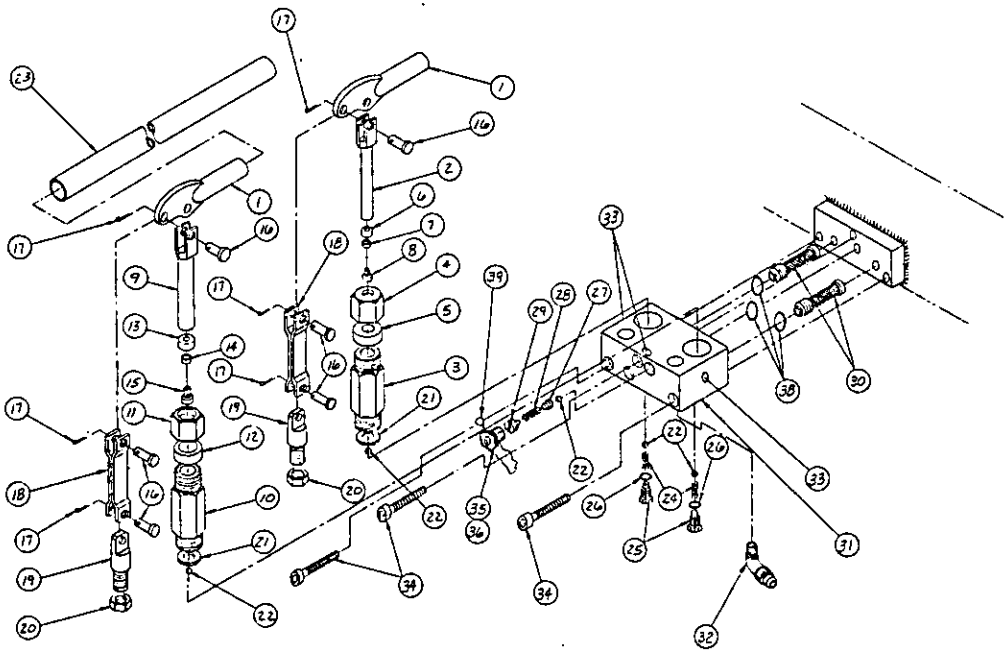


FIGURE 3.

| DWG NO | 863998 | REV | 1 |
|---|---|---|---|

| ZONE | REV | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|---|
| | | ECN 2909, NEW RELEASE | 10-8-87 | Y.N. |

| ITEM | QTY | FSCM NO | PART OR IDENTIFYING NO | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION |
|---|---|---|---|---|---|
| 39 | 1 | | 390-022 | LEAD AND WIRE SEAL | |
| 38 | 3 | | 55925-113 | O-RING | |
| 37 | | | | | |
| 36 | 1 | | 55925-904 | O-RING | |
| 35 | 1 | | 717-066 | PLUG | |
| 34 | 3 | | 323-009 | SCREW, SOC HD CAP 3/8-24 x 3" LG | |
| 33 | 3 | | 717-010 | PLUG, HEX SOC 1/16 NPT | |
| 32 | 1 | | 722-009 | ELBOW, 45° 1/4 MPT x 3/8 FLARE | |
| 31 | 1 | | 85425 | VALVE BLOCK | |
| 30 | 2 | | 55568 | OIL SCREEN | |
| 29 | 1 | | 55148 | SET SCREW | |
| 28 | 1 | | 55154H | SPRING | |
| 27 | 1 | | 55153 | GUIDE | |
| 26 | 2 | | 55925-903 | O-RING | |
| 25 | 2 | | 55620 | PLUG | |
| 24 | 2 | | 55621 | SPRING | |
| 23 | 1 | | 86376 | PUMP HANDLE | |
| 22 | 5 | | 412-004 | BALL 1/4 DIA | |
| 21 | 2 | | 55024 | GASKET | |
| 20 | 2 | | 352-004 | NUT, JAM 5/8-18 UNF | |
| 19 | 2 | | 55011 | ANCHOR | |
| 18 | 2 | | 55015 | LINK | |
| 17 | 6 | | 372-001 | PIN, COTTER 3/32 x 3/4 | |
| 16 | 6 | | 55002 | PIN, FLAT HD | |
| 15 | 1 | | 323-056 | SCREW 1/4-20 x 1 1/2 LG | |
| 14 | 1 | | 55049 | CUP RETAINER 3/4 DIA | |
| 13 | 1 | | 55048 | CUP 3/4 DIA | |
| 12 | 1 | | 55044 | PACKING 3/4 DIA | |
| 11 | 1 | | 55045 | GLAND 3/4 DIA | |
| 10 | 1 | | 55046 | BODY 3/4 DIA | |
| 9 | 1 | | 55047 | PLUNGER 3/4 DIA | |
| 8 | 1 | | 323-055 | SCREW 8-32 x 1/2 LG | |
| 7 | 1 | | 55033 | CUP RETAINER 7/16 DIA | |
| 6 | 1 | | 55031 | CUP 7/16 DIA | |
| 5 | 1 | | 55004 | PACKING 7/16 DIA | |
| 4 | 1 | | 55005 | GLAND 7/16 DIA | |
| 3 | 1 | | 55006 | BODY 7/16 DIA | |
| 2 | 1 | | 55007 | PLUNGER 7/16 DIA | |
| 1 | 2 | | 55001 | FULCRUM | |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS DECIMALS ANGLES
.XX ± .01 ± 1°
.XXX ± .005

MATERIAL

FINISH

NEXT ASSY | USED ON

APPLICATION

DO NOT SCALE DRAWING

CONTRACT NO

| APPROVALS | DATE |
|---|---|
| DRAWN Bill Wright | 10-7-87 |
| CHECKED J.W. Nunn | 10-7-87 |
| ISSUED | |

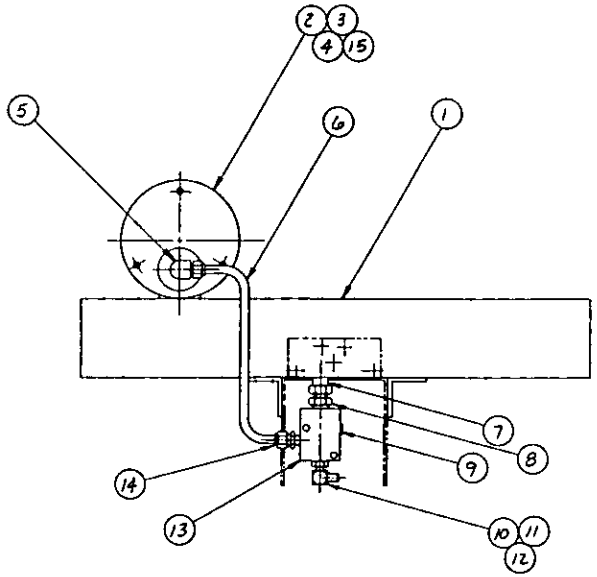
MALABAR

VALVE BLOCK ASSEMBLY

| SIZE | FSCM NO | DWG NO | REV |
|---|---|---|---|
| D | 94861 | 863998 | |

SCALE ~ SHEET 1 OF 1

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | REV | DESCRIPTION | DATE | APPROVED |
| | A | ECN 2909, REDRAWN | 10-8-87 | D.H. |
| | B | SEE ECN 4397 | 3-10-95 | W/D.H. |




| ITEM NO. | QTY REQD | FSCM NO. | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION |
|---|---|---|---|---|---|
| 15 | 3 | | 323-071 | SHCS, 10-32 × 7/8 LG (FOR ASHCROFT GAUGE) | |
| 14 | 1 | | 721-009 | MALE CONNECTOR 3/8 T | |
| 13 | 1 | | 86367 | CROSS CHECK VALVE | |
| 12 | 1 | | 722-003 | ELBOW, 90° 3/8 × 3/8 SAE-O | |
| 11 | 1 | | 79367 | SPRING | |
| 10 | 1 | | 412-001 | BALL 3/8 DIA | |
| 9 | 1 | | 717-006 | PLUG 1/4 MPT | |
| 8 | 1 | | 711-018 | REDUCER 3/8 MPT × 1/4 MPT | |
| 7 | 1 | | 751-001 | ADAPTER 3/8 MALE O-RING × FM | |
| 6 | 1 | | 732-010 | TUBING, 3/8 O.D × .065 W × 20" LG | S.S. |
| 5 | 1 | | 722-025 | ELBOW, 90° 1/2 FPT × 3/8 T | |
| 4 | 3 | | 363-009 | LOCKWASHER #10 | |
| 3 | 3 | | 323-073 | SHCS, 10-32 × 1 1/4 LG (FOR MARSH GAUGE) | |
| 2 | 1 | | 83275 | GAUGE | |
| 1 | 1 | | 80209 | RESERVOIR W/GAUGE MOUNT | |

PARTS LIST

| APPLICATION | |
|---|---|
| 868500 | 8685 |
| 83200R | 832R |

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| Bob Wright | 10-7-87 |
| D.W. Harris | 10-8-87 |

MALABAR HYDRAULICS
SAN VALLEY, CALIFORNIA

LOAD GAUGE KIT

SIZE C | FSCM NO. 94861 | DWG. NO. 83219 | REV. B

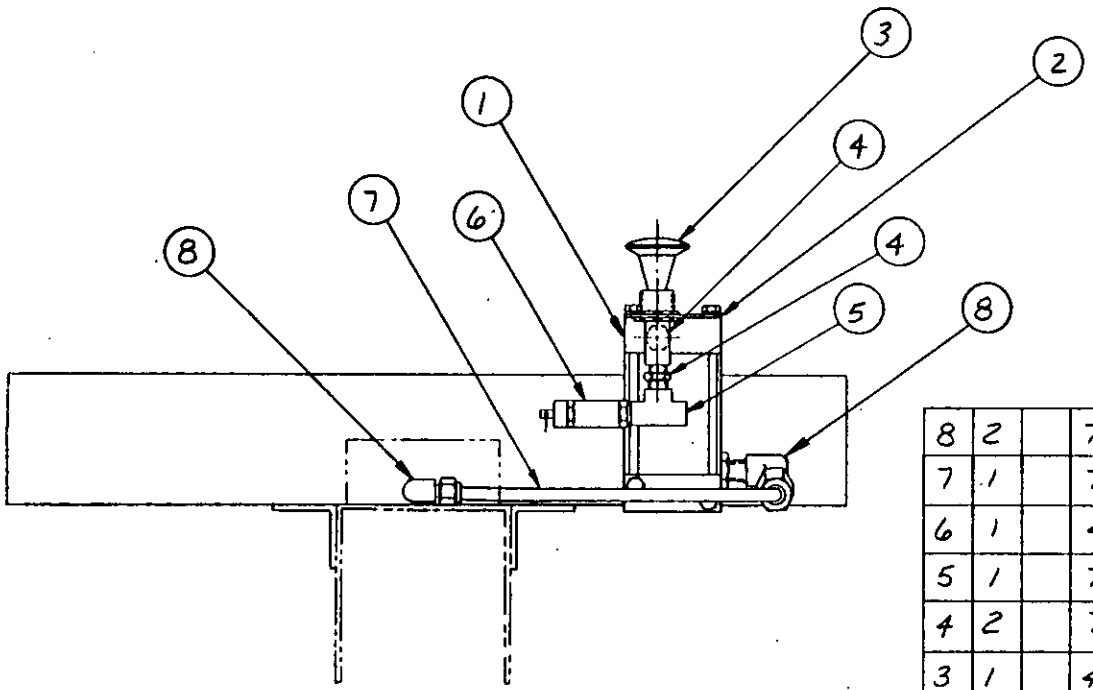
SCALE 1/4 | SHEET 1 of 1

DWG NO. 83219 REV B

PAGE 8

| DWG. NO. | SH | REV. |
|---|---|---|
| 80218 | 1 | A |

| REVISIONS | | | |
|---|---|---|---|
| REV. | DESCRIPTION | DATE | APPROVED |
| A | ECN 2909, REDRAWN | 10-8-87 | J.H. |




| ITEM NO. | QTY REQD | FSCM NO | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION |
|---|---|---|---|---|---|
| 8 | 2 | | 722-014 | ELBOW 3/8 T × 1/4 MPT | |
| 7 | 1 | | 732-010 | TUBING, 3/8 O.D. × .065 W × 12" LG | S.S. |
| 6 | 1 | | 425-001 | AIR RELIEF VALVE | |
| 5 | 1 | | 713-013 | TEE 1/4 NPT | |
| 4 | 2 | | 711-024 | NIPPLE, REDUCING 1/4 × 1/8 | |
| 3 | 1 | | 421-006 | VALVE | |
| 2 | 1 | | 72585 | PLATE, MOUNT | |
| 1 | 1 | | 441-018 | AIR PUMP | |

PARTS LIST

| | |
|---|---|
| | |
| | |
| | |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± ~ DECIMALS .XX ± ~ .XXX ± ~ ANGLES ± ~

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN Bill Wright | 10-8-87 |
| CHECKED J.W. Heine | 10-8-87 |
| ISSUED | |

**MALABAR HYDRAULICS**
SIMI VALLEY, CALIFORNIA

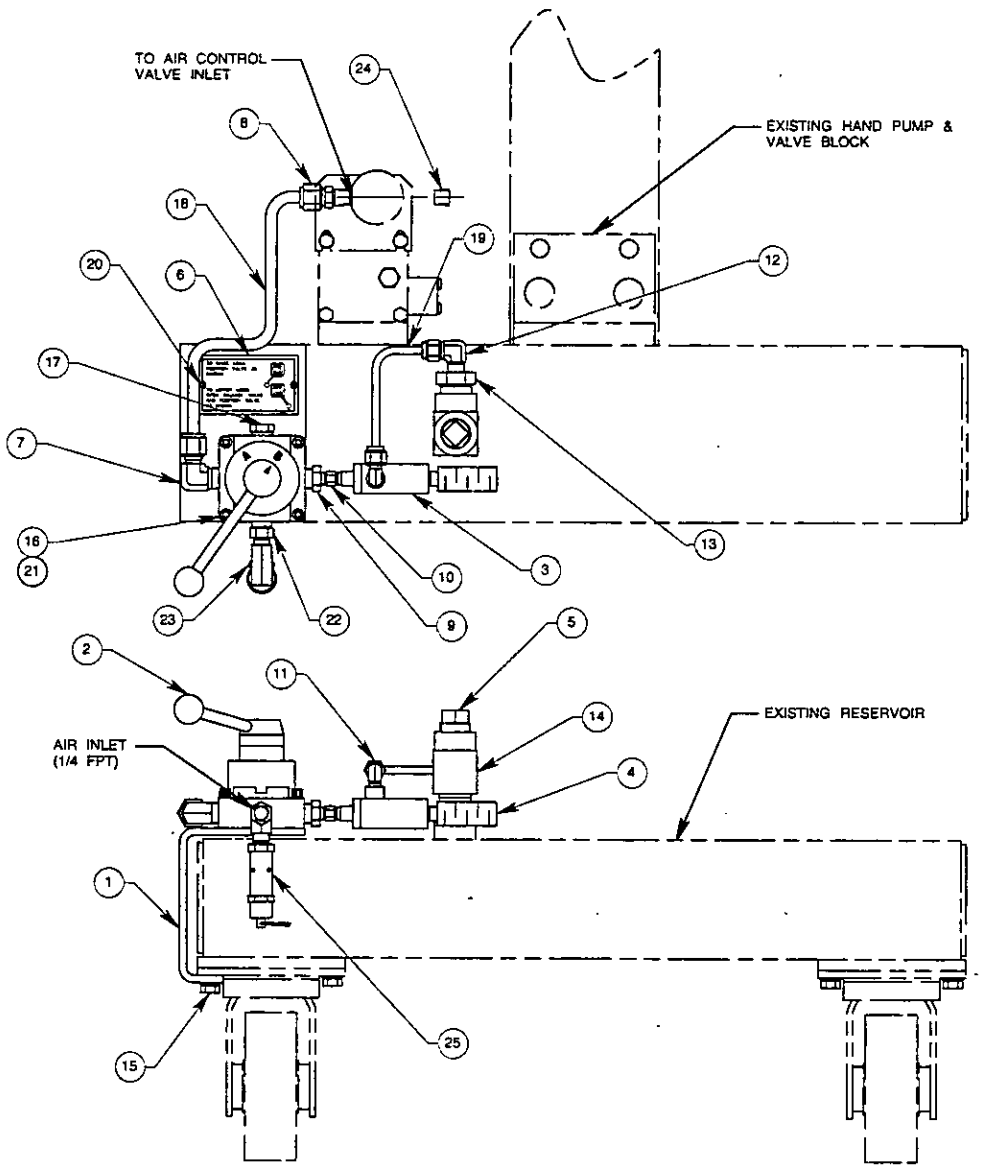
# AIR PUMP KIT

| SIZE | FSCM NO. | DWG. NO. | REV. |
|---|---|---|---|
| B | 94861 | 80218 | A |

SCALE 1/4 SHEET 1 OF 1

# TROUBLE SHOOTING CHART

| TROUBLE | PROBABLE CAUSE | REMEDY |
|---|---|---|
| Jack will not raise. | Release valve open. (Oil passing back into reservoir.) | Close valve firmly. |
| | Intake valve open. (Oil passing back into reservoir.) | Pump rapidly to flush dirt off. |
| | Discharge valve open. (Oil passing back into pump chamber.) | Pump rapidly to flush dirt off. |
| | Sticking intake valve. | Remove pump from jack base. Unscrew valve block. Clean or replace valve. |
| | Clogged screen. | Remove and clean. |
| | Lack of oil. Air under plunger. | Refill. Check for leaks. Bleed air out by opening release valve. Pump rapidly a few times and close release valve. |
| Jack will not raise to full height. | Lack of oil. | Refill, check for leaks. |
| | Sticking intake valve. | Remove pump from jack base. Unscrew valve block. Clean or replace ball valves. Re-tighten or repair. |
| Jack will not raise capacity load. | High pressure leaks. (At pump or release valve.) | Reseat valve. |
| | Leaky release valve. | Reseat valve and clean valve block. |
| Jack raises and falls during each stroke | Leaky discharge valve. | Tighten or replace ball valve or packing. |
| Jack will not hold up load. | Leaky release valve. | Reseat valve. |
| | Defective "O" Ring and Back-Up Ring. | Remove plunger and replace "O" Ring and Back-Up Ring. |
| Jack will not lower the load. | Damaged release valve. | Remove and replace parts as needed. |
| | Bent plunger. | Replace. |
| Jack will not close completely. | Air under plunger. | Bleed air out. Open release valve and pump rapidly several times. Close valve. |
| Handle stroke only partly effective. | Air in pump chamber. | Open release valve and pump rapidly several times. Close valve. |
| | Sticking intake valve. | Remove pump and clean valve block. |
| | Clogged screen. | Remove and clean. |
| Handle raises without effort. | Leaky intake valve. | Remove pump and clean valve block. |
| Handle snaps back. | Sticking intake valve. | Open release valve. Pump rapidly several times. Close valve. |
| | Clogged screen. | Remove and clean. |




| DWG NO. | SH | REV |
|---|---|---|
| 83260 | 1 | |

REVISIONS

| ZONE | REV | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| | | ECN 3886, NEW RELEASE | 10/30/92 | HL | BW |

| ITEM NO | QTY REQD | FSCM NO | PART OR IDENTIFYING NO | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION |
|---|---|---|---|---|---|
| 25 | REF | | 425-001 | AIR RELIEF VALVE, 1/4 MPT | |
| 24 | 1 | | 717-006 | PLUG, 1/4 MPT | |
| 23 | 1 | | 713-013 | TEE, BRASS, 1/4 FPT | |
| 22 | 1 | | 711-030 | NIPPLE, BRASS, 3/8 MPT X 1/4 MPT | |
| 21 | 4 | | 383-014 | SPLIT LOCKWASHER, HI-COLLAR, 1/4 | |
| 20 | 2 | | 397-010 | SELF TAPPING SCREW, #6-32 X 3/16 LG | |
| 19 | A/R | | 732-003 | TUBE, 1/4 O.D. X .035 WALL X 8" LG | |
| 18 | A/R | | 732-002 | TUBE, 3/8 O.D. X .049 WALL X 16" LG | |
| 17 | 1 | | 483-004 | BREATHER, 3/8 MPT | |
| 16 | 4 | | 323-048 | SHCS, 1/4-20 X 1 1/2 LG | |
| 15 | 2 | | 321-011 | HHCS, 3/8-16 X 1" LG | |
| 14 | 1 | | 713-030 | STREET TEE, 3/4 NPT | |
| 13 | 1 | | 714-007 | REDUCER BUSHING, 3/4 MPT X 1/4 FPT | |
| 12 | 1 | | 722-021 | ELBOW, 1/4 TUBE X 1/4 MPT | |
| 11 | 1 | | 722-011 | ELBOW, 1/4 TUBE X 1/8 MPT | |
| 10 | 1 | | 711-089 | NIPPLE, BRASS, 1/8 MPT | |
| 9 | 1 | | 714-016 | REDUCER, BRASS, 3/8 MPT X 1/8 FPT | |
| 8 | 1 | | 721-009 | CONNECTOR, 3/8 TUBE X 1/4 MPT | |
| 7 | 1 | | 722-010 | ELBOW, 3/8 TUBE X 3/8 MPT | |
| 6 | 1 | | 86562 | PLACARD, INSTRUCTION | |
| 5 | 1 | | 86564 | DIPSTICK WELDMENT | |
| 4 | 1 | | 472-003 | MUFFLER, 1/4 FPT | |
| 3 | 1 | | 490-021 | AIR OPERATED VACUUM PUMP | |
| 2 | 1 | | 86563 | HAND VALVE | |
| 1 | 1 | | 83261 | MOUNTING PLATE | |

PARTS LIST

NOTES : UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ±1/32, DECIMALS, ANGLES ±1°

MATERIAL: SEE PARTS LIST

WEIGHT:

NEXT ASSEMBLY | USED ON | APPLICATION

DO NOT SCALE DRAWING

CONTRACT NO

| | APPROVAL | DATE |
|---|---|---|
| DRAWN | H. LAM | 10/92 |
| CHECKED | BILL W. | 10/92 |
| ISSUED | | |

MALABAR INTERNATIONAL
SIMI VALLEY, CALIFORNIA

AIR OPERATED VACUUM RETRACT KIT

| SIZE | FSCM NO. | DWG NO. | REV |
|---|---|---|---|
| D | 94861 | 83260 | |

SCALE 1/2 | SHEET 1 OF 1