TRTP 255CD
Triple Roller Tube Paver
NOTICE

This manual, or a copy of it, must be kept with the machine at all times. There is a manual storage container located on the machine for your convenience.
This manual covers the 255CD Triple Roller Tube Pavers listed below:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>045246</td>
<td>TRTP, 12' 255CD 44KBT W/HYD SPRAY</td>
</tr>
<tr>
<td>045247</td>
<td>TRTP, 14'</td>
</tr>
<tr>
<td>045248</td>
<td>TRTP, 16'</td>
</tr>
<tr>
<td>045249</td>
<td>TRTP, 18'</td>
</tr>
<tr>
<td>045250</td>
<td>TRTP, 20'</td>
</tr>
<tr>
<td>045251</td>
<td>TRTP, 22'</td>
</tr>
<tr>
<td>045252</td>
<td>TRTP, 24'</td>
</tr>
<tr>
<td>045253</td>
<td>TRTP, 26'</td>
</tr>
<tr>
<td>045254</td>
<td>TRTP, 28'</td>
</tr>
<tr>
<td>045255</td>
<td>TRTP, 30'</td>
</tr>
<tr>
<td>045256</td>
<td>TRTP, 32'</td>
</tr>
<tr>
<td>045257</td>
<td>TRTP, 34'</td>
</tr>
</tbody>
</table>

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Allen® Products are covered under one or more of the following patent numbers:
**U.S. Design Patents**: 344,736; 400,542; 400,544; 402,998; 402,999; 403,332; 404,041; 404,042; 410,931; 413,127; 416,564; 465,897; 466,909; 474,203.
**U.S. Utility Patents**: 5,108,220; 5,238,323; 5,328,295; 5,352,063; 5,405,216; 5,476,342; 5,480,257; 5,480,258; 5,533,831; 5,562,361; 5,567,075; 5,613,801; 5,658,089; 5,685,667; 5,803,658; 5,816,739; 5,816,740; 5,890,833; 5,934,823; 5,967,696; 5,988,938; 5,988,939; 6,019,433; 6,019,545; 6,048,130; 6,053,660; 6,089,786; 6,106,193; 6,857,815; 5,288,166; 6,582,153 B1.
**Canadian Patents**: 2,039,893.
**With other Patents Pending**.

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049307; 08/08
LIMITED WARRANTY and LIMITATION OF LIABILITY

Allen Engineering Corporation ("Allen") warrants its products to be free of defects in material or workmanship for the following periods:

A. New Machines and Parts .......................... One Year

The above listed warranty periods are effective for Allen Machines with a first day of use by End User on April 1, 2007 or later.

Warranty period begins on first day of use by End User. This first day of use is established by the date of a completed Allen Warranty Card or a Bill of Sale to the End User. All warranty is based on the following limited warranty terms and conditions, including the disclaimer of implied warranties and consequential damages.

1. Allen's obligation and liability under this warranty is limited to repairing or replacing parts if, after Allen's inspection, there is determined to be a defect in material or workmanship. Allen reserves the choice to repair or replace.

2. If Allen chooses to replace the part, it will be at no cost to the customer and will be made available to the Allen Distributor, Dealer, or Rental Center from whom the End User purchased the product.

3. Replacement or repair parts, installed in the product, are warranted only for the remainder of warranty period of the product as though they were the original parts.

4. Allen does not warranty engines. Engine warranty claims should be made directly to an authorized factory service center for the particular engine manufacturer.

5. Allen's warranty does not cover the normal maintenance of products or its components (such as engine tune-ups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as belts and consumables).

6. Allen's warranty will be void if it is determined that the defect resulted from operator abuse, failure to perform normal maintenance on the product, modification to product, alterations or repairs made to the product without the written approval of Allen. Allen specifically excludes from warranty any damage to any trowels resulting from an impact to the rotors.

7. Impact damage is not covered under the Allen Gear Box warranty.

8. Allen will pay shop labor on warranty items at the Allen Shop Labor Rate in existence on the date of the warranty claim. An Allen Labor Chart will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.

9. Allen will pay freight on warranty replacement parts at worldwide standard ground rates. No warranty replacement parts will be shipped air freight at the expense of Allen. Allen only pays outbound freight charges when sending warranty replacement parts to the customer via ground service. Allen does not pay any inbound freight. However, if Allen determines this to be a warranted item, only then will Allen reimburse the customer for inbound freight at standard ground rates.

10. ALLEN ENGINEERING CORPORATION’S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES; SHOP SUPPLIES; ENVIRONMENTAL SURCHARGES; AIR FREIGHT; TRAVEL TIME; LOSS OF TIME; INCONVENIENCE; LOSS OF RENTAL REVENUE; RENTAL COSTS OF EQUIPMENT USED TO REPLACE THE PRODUCT BEING REPAIRED; LOSS OF USE OF THE PRODUCT; COMMERCIAL LOSS; OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.

11. ALLEN ENGINEERING CORPORATION MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THIS LIMITED WARRANTY IS IN LIEU OF THE WARRANTY OF MERCHANTABILITY AND FITNESS. THERE ARE NO OTHER WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THIS DOCUMENT.

12. No Allen employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Allen Engineering Corporation.
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</tr>
</tbody>
</table>
This manual provides information and procedures to safely operate and maintain the Allen Concrete Paver Machine.

For your own safety and protection from personal injury, carefully read, understand, and observe the safety instructions described in this manual. Keep this manual or a copy of it with the machine at all times.

Always operate this machine in accordance with the instructions described in this manual. A well maintained piece of equipment will provide many years of trouble free operation.

This manual is divided into the following sections:

- **SECTION 1 SAFETY**
- **SECTION 2 OPERATIONS**
- **SECTION 3 SERVICE**
- **SECTION 4 PARTS**
- **SECTION 5 VIBRATION**

Complete any warranty requirements as specified by the engine manufacturer in their instructions found inside the manual box located on the back of the riding trowel operator’s seat.

Your engine is not manufactured by Allen Engineering Corporation, Inc, and therefore is not covered under Allen Engineering Corporation, Inc warranty.

Your engine manufacturer should be contacted if you wish to purchase a parts manual or a repair manual for your engine.

Refer to enclosed owners engine manual for complete O&M instructions. See your battery manufacturer for battery warranty.
Your Dealer has Allen Engineering Corporation trained mechanics and original Allen replacement parts. Always contact the Allen Dealer who sold you this machine for Allen Certified repairs and replacement parts.

Place Allen Dealer information below for future reference:

Dealer Name: ______________________________________________________________

Phone #: (____) - ____ - ______________________________________________________

Address: _________________________________________________________________

City: _____________________________   State:_______   Zip:_____________

Salesman: ___________________________   Mobile Phone _________________________

Additional Comments: _____________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________
Section 4.0 contains illustrated parts lists for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.

2. Include correct description and part number from the “PARTS” section of this manual.

3. Specify exact shipping instructions, including the preferred routing and complete destination address.

4. **DO NOT** return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.

5. When placing an order, please contact the AEC dealer nearest you.

---

**NOTE**

All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication.
Model Number - Serial Number Codes

Manufacturer’s Codes:

When ordering parts or requesting service information, you will always be asked to specify the model and serial numbers of the machine. The legends below specifically defines each significant character or group of characters of the Model Number and Serial Number codes.

**Model Number**

T255CD

- MODEL
- SERIES

**Serial Number**

The serial number found on the identification plate is a ten digit format. The model number identifies your machine and will ensure that you receive the correct replacement parts.

T255 08 07 47

- Production Sequence
- Month Mfd
- Year Mfd
- Series/Model
Unit Identification Plate Location:

An identification plate listing the model number and the serial number is attached to each unit and is located on the rear lower left side of mainframe. Refer to Figure 1 for serial number and model number location. This plate should not be removed at any time.

Please record the information found on this plate below so it will be available should the identification plate become lost or damaged. When ordering parts or requesting service information, you will always be asked to specify the model and serial numbers of the machine.

FILL IN FOR FUTURE REFERENCE

| Model Number: ___________________________ |
| Serial Number: __________________________ |
| Date Purchased: _________________________ |
| Purchased From: _________________________ |

Figure 1
Serial Number Location
Technical Specifications

Measurements in this manual are in U.S. units and their customary metric units (i.e., metric units contained within brackets [8 mm]).

Machine Features:

ENGINE:
• Hydraulic Oil Reservoir ........................................ 25 Gallons (94.6L)
• Fuel Reservoir ..................................................10 Gallons (37.85L)
• Direct drive hydraulic pump system? .........................Yes
• Machine widths available in 2’ increments ..................12’ to 34’ (3.66M to 10.37M)
• Total machine weight at 22’ ..................................5,570 lbs (2526.5kg)
  (weight will vary depending on machine width and optional accessories)

HYDRAULIC DRIVES:
Direct spline drive to each tube? ..............................Yes
Individual control for travel and screeding tubes? .......Yes
Variable speed controls? ........................................Yes

SCREEDING TUBE:
Direct drive forward and reverse? .........................Yes
Speed from 0 to 180 RPM? .................................Yes

DRIVE TUBES:
Direct drive to each tube? ......................................Yes
Variable speed forward and reverse 0’ to 25’ per minute? ...Yes
Drive tube scrapers ............................................Standard
Heavy duty alloy steel octagonal drivers with spline motor connectors on all tubes?  Yes

ROLLER TUBES:
Diameter ..........................................................10” (255mm)
Wall Thickness ....................................................25” (6.35mm)
Tube weight per foot .........................................27 lbs (12.2kg)
Water Ballast available? ..................................Yes
Operator Platform Standard? .................................Yes
Idle end counter weight? ....................................Yes
Sectionalized overhead? ....................................Yes

SPRAY SYSTEMS:
Hydraulic spray system (50 gallon water tank) ..............Standard
Technical Specifications, continued

STEERING LEG:
Hydraulic Steering Leg ........................................ Standard

WALKWAYS:
Front Walkway ..................................................... Optional
Rear Walkway ..................................................... Optional
Counter balance tube (must have rear walkway) ........ Optional

OPTIONS:
Manual crown kit ................................................. Optional
Full width vibration ............................................. Optional
Edge form vibration ............................................. Optional
<table>
<thead>
<tr>
<th>Engine Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engine Make &amp; Model</strong></td>
</tr>
<tr>
<td>Gross Intermittent output</td>
</tr>
<tr>
<td>Net Continuous output</td>
</tr>
<tr>
<td>Fuel and type</td>
</tr>
<tr>
<td>Cylinder arrangement</td>
</tr>
<tr>
<td>Bore x Stroke</td>
</tr>
<tr>
<td>Total piston displacement</td>
</tr>
<tr>
<td>Compression ratio</td>
</tr>
<tr>
<td>Length x width x height (standard model)</td>
</tr>
<tr>
<td>Dry weight (standard model)</td>
</tr>
</tbody>
</table>
Machine Dimensional Specifications

All information, specifications, and illustrations on this page in this manual are subject to change without notice and are based on the latest information at the time of publication.
As the angle between each leg of a sling increases, the load on each leg increases. The effect is the same whether a single sling is being used as a basket, or two / three slings are being used in a straight pull.

This illustration shows the increased load on a sling leg when lifting a load with angled slings.

### Sling Angle Factor

The Sling Angle Factor is a multiplier used to determine the required sling size when angle formed between sling and load is less than 90°.

- Need to estimate angle to nearest 5°
- Avoid rigging loads where angle is less than 45°

<table>
<thead>
<tr>
<th>Sling angle</th>
<th>Load angle factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>90°</td>
<td>1.000</td>
</tr>
<tr>
<td>85°</td>
<td>1.004</td>
</tr>
<tr>
<td>80°</td>
<td>1.015</td>
</tr>
<tr>
<td>75°</td>
<td>1.035</td>
</tr>
<tr>
<td>70°</td>
<td>1.064</td>
</tr>
<tr>
<td>65°</td>
<td>1.103</td>
</tr>
<tr>
<td>60°</td>
<td>1.155</td>
</tr>
<tr>
<td>55°</td>
<td>1.221</td>
</tr>
<tr>
<td>50°</td>
<td>1.305</td>
</tr>
<tr>
<td>45°</td>
<td>1.414</td>
</tr>
<tr>
<td>40°</td>
<td>1.555</td>
</tr>
<tr>
<td>35°</td>
<td>1.742</td>
</tr>
<tr>
<td>30°</td>
<td>2.000</td>
</tr>
<tr>
<td>25°</td>
<td>2.366</td>
</tr>
<tr>
<td>20°</td>
<td>2.924</td>
</tr>
<tr>
<td>15°</td>
<td>3.884</td>
</tr>
<tr>
<td>10°</td>
<td>5.759</td>
</tr>
<tr>
<td>5°</td>
<td>11.47</td>
</tr>
</tbody>
</table>

For all lifts, straight pulls or angled lifts, a Riggers Chart must be consulted. With multiple sling lifts the chart will be used to determine the load that each leg can support safely. Determining load on each leg of a multi-leg lift:

- Divide the total load by the number of legs. This provides the lift per leg if the lift were to be a straight pull.
- Determine the angle between the legs of the sling. - When three or more legs will be used, the angle will be twice the angle between one leg and an imaginary line straight down from the lifting hook.
- Multiply the load per leg by the load factor for each leg angle being used. See “computing the load on the legs of a sling” on the Riggers Chart. This will give you the ACTUAL load on each leg.

The actual load must not exceed the rated sling capacity of any sling leg.
Hooks

**Eye Hook Rated Capacity Table**
*(Forged Alloy Steel)*

<table>
<thead>
<tr>
<th>Throat Opening</th>
<th>Safe Working Limit (SWL, in pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8</td>
<td>600</td>
</tr>
<tr>
<td>11/16</td>
<td>800</td>
</tr>
<tr>
<td>1</td>
<td>1500</td>
</tr>
<tr>
<td>1-1/16</td>
<td>2000</td>
</tr>
<tr>
<td>1-1/4</td>
<td>4000</td>
</tr>
<tr>
<td>1-3/8</td>
<td>4500</td>
</tr>
<tr>
<td>1-13/32</td>
<td>5000</td>
</tr>
<tr>
<td>1-1/2</td>
<td>5500</td>
</tr>
<tr>
<td>1-17/32</td>
<td>6000</td>
</tr>
</tbody>
</table>

**Incorrect Hook Connections**

- Side load
- Back load
- Point load

**Hook Pre-Use Inspection Checklist**

Inspect hooks daily before use and frequently during use. Remove from service when any of the following conditions exist:

- Missing or illegible manufacturer identification
- Cracks, nicks, or gouges
- Damage from heat
- Unauthorized repairs
- Improper operation and locking of self-locking hooks
- Any twist from plane of un bent hook
- Distortion or wear – any increase in throat opening of 5% not to exceed ¼ inch, or wear exceeding 10% of original dimension

For added safety, hooks must be equipped with a latch or the throat opening closed-off/secured with a mouse. The latch or mouse is not intended to support the load.
## Shackles

### Shackles Capacity Table (Forged with Alloy Pins)

<table>
<thead>
<tr>
<th>Nominal Shackle Size</th>
<th>Rated Capacity (Pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>660</td>
</tr>
<tr>
<td>1/4</td>
<td>1000</td>
</tr>
<tr>
<td>5/16</td>
<td>1500</td>
</tr>
<tr>
<td>3/8</td>
<td>2000</td>
</tr>
<tr>
<td>7/16</td>
<td>3000</td>
</tr>
<tr>
<td>1/2</td>
<td>4000</td>
</tr>
<tr>
<td>5/8</td>
<td>6500</td>
</tr>
<tr>
<td>3/4</td>
<td>9500</td>
</tr>
<tr>
<td>7/8</td>
<td>13000</td>
</tr>
<tr>
<td>1</td>
<td>17000</td>
</tr>
<tr>
<td>1 1/8</td>
<td>19000</td>
</tr>
<tr>
<td>1 1/4</td>
<td>24000</td>
</tr>
<tr>
<td>1 3/8</td>
<td>27000</td>
</tr>
<tr>
<td>1 1/2</td>
<td>34000</td>
</tr>
<tr>
<td>2 1/2</td>
<td>110000</td>
</tr>
</tbody>
</table>

- If different from capacities listed above, use rated capacity marked on the shackle.
- If capacity marking is absent, shackle should be removed from service.
**Shackle Pre-Use Inspection Checklist**

Inspect shackles daily before use and frequently during use.

- Each shackle body shall have forged, cast, or die stamped markings by the manufacture showing: name or trademark of the manufacturer, rated load/capacity (WLL or SWL), and size. This information shall not be missing and must be legible.

Remove from service when any of the following conditions exist:

- Indications of heat damage including weld spatter or arc strikes
- Excessive pitting or corrosion
- 10% reduction of the original or catalog dimension at any point around the body or pin
- Body spread including: bent, twisted, distorted, stretched, elongated, cracked, or broken load-bearing components
- Excessive nicks or gouges
- Incomplete pin engagement, shoulder of pin is not flush with shackle body
- Excessive thread damage
- Evidence of unauthorized welding

<table>
<thead>
<tr>
<th>Angle of Side Load from Vertical In-Line of Shackle</th>
<th>Percent Rated Load Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0° - 5°</td>
<td>0%</td>
</tr>
<tr>
<td>5° - 45°</td>
<td>30%</td>
</tr>
<tr>
<td>46° - 90°</td>
<td>50%</td>
</tr>
<tr>
<td>Over 90°</td>
<td>Avoid</td>
</tr>
</tbody>
</table>

The rated capacity of shackles only applies when they are symmetrically loaded and the included angle between two sling legs is a maximum of 120°. Shackle capacity must be reduced when the angle is greater than 120°.
### Alloy Chain Sling Capacities (lb.)

**Grade 80**

<table>
<thead>
<tr>
<th>Size in inches</th>
<th>Single Leg</th>
<th>Two Leg Slings</th>
<th>Three &amp; Four Leg Slings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60°</td>
<td>45°</td>
<td>60°</td>
</tr>
<tr>
<td>9/32</td>
<td>3,500</td>
<td>2,800</td>
<td>6,100</td>
</tr>
<tr>
<td>3/8</td>
<td>7,100</td>
<td>5,700</td>
<td>12,300</td>
</tr>
<tr>
<td>1/2</td>
<td>12,000</td>
<td>9,600</td>
<td>20,800</td>
</tr>
<tr>
<td>5/8</td>
<td>18,100</td>
<td>14,500</td>
<td>31,300</td>
</tr>
<tr>
<td>3/4</td>
<td>28,300</td>
<td>22,600</td>
<td>49,000</td>
</tr>
<tr>
<td>7/8</td>
<td>34,200</td>
<td>27,400</td>
<td>59,200</td>
</tr>
<tr>
<td>1</td>
<td>47,700</td>
<td>38,200</td>
<td>82,600</td>
</tr>
<tr>
<td>1-1/4</td>
<td>72,300</td>
<td>57,800</td>
<td>125,200</td>
</tr>
</tbody>
</table>

**Grade 100**

<table>
<thead>
<tr>
<th>Size in inches</th>
<th>Single Leg</th>
<th>Two Leg Slings</th>
<th>Three &amp; Four Leg Slings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60°</td>
<td>45°</td>
<td>60°</td>
</tr>
<tr>
<td>9/32</td>
<td>4,300</td>
<td>3,500</td>
<td>7,400</td>
</tr>
<tr>
<td>3/8</td>
<td>8,800</td>
<td>7,100</td>
<td>15,200</td>
</tr>
<tr>
<td>1/2</td>
<td>15,000</td>
<td>12,000</td>
<td>26,000</td>
</tr>
<tr>
<td>5/8</td>
<td>22,600</td>
<td>18,100</td>
<td>39,100</td>
</tr>
<tr>
<td>3/4</td>
<td>35,300</td>
<td>28,300</td>
<td>61,100</td>
</tr>
<tr>
<td>7/8</td>
<td>42,700</td>
<td>34,200</td>
<td>74,000</td>
</tr>
</tbody>
</table>

### Rigging Hardware Capacities (lb.)

<table>
<thead>
<tr>
<th>Size in inches</th>
<th>Shoulder Eye Bolt</th>
<th>Turnbuckle</th>
<th>Shackle</th>
<th>Wire Rope Clip</th>
<th>Swivel Anchor</th>
<th>Alloy Master Links</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Line</td>
<td>45 deg.</td>
<td>Eye Bolt</td>
<td>Eye or Jaw</td>
<td>SP Anchor</td>
<td>Min. # clips</td>
</tr>
<tr>
<td>1/4</td>
<td>500</td>
<td>125</td>
<td>500</td>
<td>1,000</td>
<td>2</td>
<td>4.75</td>
</tr>
<tr>
<td>5/16</td>
<td>800</td>
<td>200</td>
<td>800</td>
<td>1,500</td>
<td>2</td>
<td>5.25</td>
</tr>
<tr>
<td>3/8</td>
<td>1,200</td>
<td>300</td>
<td>1,200</td>
<td>2,000</td>
<td>2</td>
<td>6.50</td>
</tr>
<tr>
<td>7/16</td>
<td>2,200</td>
<td>550</td>
<td>2,200</td>
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<td>3</td>
<td>12.00</td>
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<td>875</td>
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<td>6,500</td>
<td>3</td>
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<td>4</td>
<td>18.00</td>
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<tr>
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<td>7,200</td>
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<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
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<td>24,000</td>
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<td>44.00</td>
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<td>1-1/2</td>
<td>15,200</td>
<td>3,800</td>
<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
<tr>
<td>2</td>
<td>15,200</td>
<td>3,800</td>
<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
<tr>
<td>2-1/2</td>
<td>15,200</td>
<td>3,800</td>
<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
<tr>
<td>3</td>
<td>15,200</td>
<td>3,800</td>
<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
<tr>
<td>3-1/2</td>
<td>15,200</td>
<td>3,800</td>
<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
<tr>
<td>4</td>
<td>15,200</td>
<td>3,800</td>
<td>15,200</td>
<td>24,000</td>
<td>7</td>
<td>44.00</td>
</tr>
</tbody>
</table>
Lifting Slings - Minimum Capacity: 10,000lbs Each
SAFETY DATA SHEET
CITGO A/W Hydraulic Oil 46

Section 1. Identification

**GHS product identifier**: CITGO A/W Hydraulic Oil 46  
**Synonyms**: Hydraulic Fluid  
**Code**: 633492001

**Supplier's details**: CITGO Petroleum Corporation  
P.O. Box 4689  
Houston, TX 77210  
sdvend@citgo.com

**Emergency telephone number**  
Technical Contact: (800) 248-4684  
Medical Emergency: (832) 486-4700  
CHEMTREC Emergency: (800) 424-9300  
(United States Only)

Section 2. Hazards identification

**OSHA/HCS status**: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture**: Not classified.

**GHS label elements**

**Signal word**: Warning
**Hazard statements**: Injection under the skin can cause severe injury.  
Most damage occurs in the first few hours.  
Initial symptoms may be minimal.

**Precautionary statements**

**General**: Avoid contact with eyes, skin and clothing. MAY BE HARMFUL IF SWALLOWED. IF IN EYES: Rinse cautiously with water for several minutes. Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

**Prevention**: Not applicable.
**Response**: Not applicable.
**Storage**: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
**Disposal**: Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise classified**: Injection of petroleum hydrocarbons requires immediate medical attention.

Section 3. Composition-information on ingredients

**Substance/mixture**: Mixture
**Other means of identification**: Hydraulic Fluid

**CAS number/other identifiers**

**CAS number**: Not applicable.
Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: No known significant effects or critical hazards.

Skin contact: Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.

Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: Treat symptomatically and supportively.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Specific hazards arising from the chemical: In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Section 5. Fire-fighting measures

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

Appropriate engineering controls

Environmental exposure controls

: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Physical state

: Liquid.

Color

: Light amber [Light]

Odor

: Mild petroleum odor [Slight]

pH

: Not applicable.

Boiling point

: Not available.

Flash point

: Open cup: 230°C (446°F) [Cleveland.]

Lower and upper explosive (flammable) limits

: Not available.

Vapor pressure

: Not available.

Vapor density

: Not available.

Relative density

: Not available.

Density lbs/gal

: 7.2 lbs/gal

Gravity, °API

: 32.3

Viscosity

: Dynamic (room temperature): Not applicable.
  Kinematic (room temperature): Not applicable.
  Kinematic (40°C (104°F)): 0.48 cm²/s (48 cSt)
Section 9. Physical and chemical properties

Viscosity SUS : 240 SUS @100 F

Section 10. Stability and reactivity

Reactivity : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure) Not available.

Specific target organ toxicity (repeated exposure) Not available.

Aspiration hazard

Not available.
Section 11. Toxicological information

Information on the likely routes of exposure:

**Potential acute health effects**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- **Ingestion**: No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: No specific data.

**Potential chronic health effects**

- **General**: No known significant effects or critical hazards.
- **Carcinogenicity**: No known significant effects or critical hazards.
- **Mutagenicity**: No known significant effects or critical hazards.
- **Teratogenicity**: No known significant effects or critical hazards.
- **Developmental effects**: No known significant effects or critical hazards.
- **Fertility effects**: No known significant effects or critical hazards.

Section 12. Ecological information

**Toxicity**

- **Conclusion/Summary**: Not available.

**Persistence and degradability**

- **Conclusion/Summary**: Not available.

**Bioaccumulative potential**

Not available.

**Mobility in soil**

- **Soil/water partition coefficient (K<sub>OC</sub>)**: Not available.

**Other adverse effects**: No known significant effects or critical hazards.

Section 13. Disposal considerations

**Disposal methods**: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed...
Section 13. Disposal considerations

Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
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</thead>
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<td>-</td>
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<td>-</td>
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<td>No.</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user: **Transport within user’s premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

**U.S. Federal regulations**

- **Clean Water Act (CWA) 307**: Zinc and zinc compounds; toluene; phenol; lead; Cadmium (Non-pyrophoric); benzene
- **Clean Water Act (CWA) 311**: toluene; phenol; benzene

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA’s National Response Center at (800) 424-8802.

**SARA 302/304**

- **Composition/information on ingredients**: Not applicable.

**SARA 304 RQ**

- **Classification**: Not applicable.

**SARA 311/312**

- **Composition/information on ingredients**: Not applicable.

**State regulations**

- **Massachusetts**: None of the components are listed.
- **New York**: None of the components are listed.
Section 15. Regulatory information

- New Jersey: None of the components are listed.
- Pennsylvania: None of the components are listed.

**California Prop. 65**

**WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

<table>
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<tr>
<th>Ingredient name</th>
<th>%</th>
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<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
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<td>toluene</td>
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<td>No.</td>
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<td>ethyl acrylate</td>
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<td>Yes.</td>
<td>No.</td>
<td>No.</td>
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<tr>
<td>lead</td>
<td>trace</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>15 µg/day (ingestion)</td>
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<td>Cadmium (Non-</td>
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<td>Yes.</td>
<td>Yes.</td>
<td>0.05 µg/day (inhalation)</td>
<td>4.1 µg/day (ingestion)</td>
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<tr>
<td>pyrophoric)</td>
<td></td>
<td></td>
<td></td>
<td>6.4 µg/day (ingestion)</td>
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<tr>
<td>benzene</td>
<td>trace</td>
<td>Yes.</td>
<td>Yes.</td>
<td>13 µg/day (inhalation)</td>
<td>49 µg/day (inhalation)</td>
</tr>
</tbody>
</table>

**International regulations**

**International lists**
- Australia inventory (AICS): All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.
- Japan inventory: All components are listed or exempted.
- Korea inventory: All components are listed or exempted.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
- Philippines inventory (PICCS): All components are listed or exempted.
- Taiwan inventory (CSNN): Not determined.

- Canada inventory: All components are listed or exempted.
- EU Inventory: All components are listed or exempted.
- WHMIS (Canada): Not controlled under WHMIS (Canada).

Section 16. Other information

**National Fire Protection Association (U.S.A.)**

![Flammability](image)

1. Flammability
2. Health
3. Instability/Reactivity
4. Special

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

**History**

- Date of issue/Date of revision: 11/20/2014.
Section 16. Other information

Key to abbreviations:
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- UN = United Nations

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CITGO is a registered trademark of CITGO Petroleum Corporation
1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: Klübersynth GH 6- 460
Article Code: 012163
Synonyms: No information available
Chemical characterisation: Not applicable.

Supplier: Klüber Lubrication North America L.P.
32 Industrial Drive
Londonderry, NH 03053
(603) 647-4104
Fax (603) 647-4106

Emergency telephone number
CHEMTREC: 1-800-424-9300 International: (703) 527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
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<th>OSHA (TWA mg/m³):</th>
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<tbody>
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<td></td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Properties affecting health: Harmful if swallowed

Principle routes of exposure: Skin.

Skin contact: Substance may cause slight skin irritation.

Eye contact: Contact with eyes may cause irritation.

Inhalation: Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.

Ingestion: Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea

4. FIRST AID MEASURES

General advice: If symptoms persist, call a physician.

Skin contact: Rinse with plenty of water. If skin irritation persists, call a physician.

Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

Eye contact: Flush eye with water for 15 minutes. If symptoms persist, call a physician.
**Ingestion:**
Do not induce vomiting. Consult a physician.

**Notes to physician:**
Treat symptomatically.

---

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:**
Carbon dioxide (CO2), Dry chemical, Dry sand, Water spray mist or foam

**Extinguishing media which must not be used for safety reasons:**
Do not use a solid water stream as it may scatter and spread fire.

**Special protective equipment for firefighters:**
In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. Standard procedure for chemical fires.

**Specific hazards:**
Burning produces irritant fumes In the event of fire and/or explosion do not breathe fumes

**Unusual hazards:**
No hazards resulting from the material as supplied

**Specific methods:**
Water mist may be used to cool closed containers. Standard procedure for chemical fires.

**Flash point:**
> 482 °F

**Autoignition temperature:**
Not determined.

**Flammability Limits in Air:**

<table>
<thead>
<tr>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>No information available</td>
<td>No information available</td>
</tr>
</tbody>
</table>

---

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**
Contaminated surfaces will be extremely slippery. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

**Environmental precautions:**
Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains.

**Methods for cleaning up:**
Soak up with oil absorbent material. Clean contaminated surface thoroughly. Pick up and transfer to properly labelled containers.

---

### 7. HANDLING AND STORAGE

**Handling**

**Technical measures/precautions:**
No special technical protective measures required.

**Safe handling advice:**
Spilling onto the container’s outside will make container slippery. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

**Storage**

**Technical measures/storage conditions:**

**Incompatible products:**
Oxidising and spontaneously flammable products.

---

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**
Ensure adequate ventilation, especially in confined areas.
### Personal Protective Equipment

**Respiratory protection:** No personal respiratory protective equipment normally required.

**Hand protection:** Preventive skin protection

**Skin and body protection:** Usual safety precautions while handling the product will provide adequate protection against this potential effect.

**Eye protection:** Avoid contact with eyes.

**Hygiene measures:** Avoid contact with skin, eyes and clothing.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State:</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>Light yellow</td>
</tr>
<tr>
<td>Specific gravity:</td>
<td>~ 1.07</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor pressure:</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appearance:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor:</td>
<td>Not significant</td>
</tr>
<tr>
<td>Boiling point/range:</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Partly soluble.</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Stability:** No hazards to be especially mentioned

**Polymerization:** Hazardous polymerisation does not occur.

**Hazardous decomposition products:** None under normal use

**Materials to avoid:** Strong oxidising agents.

**Conditions to avoid:** Heat, flames and sparks.

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** No data available

### 12. ECOLOGICAL INFORMATION

**Mobility:** No information available.

**Bioaccumulative potential:** No information available.

**Ecotoxicity effects:** May cause long-term adverse effects in the aquatic environment.

**Aquatic toxicity:** May cause long-term adverse effects in the aquatic environment.

### 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:** In accordance with local and national regulations.

**Contaminated packaging:** Empty containers should be taken for local recycling, recovery or waste disposal

### 14. TRANSPORT INFORMATION

**DOT Proper shipping name:** Bulk Packaging: Environmentally hazardous substances, liquid, n.o.s. (Cresyl diphenyl phosphate and Triphenylphosphate)

**UN-No:** UN3082

**Hazard Class:** 9

**Packing group:** III

**ERG No:** 171
14. TRANSPORT INFORMATION

TDG (Canada)

IMO / IMDG

ICAO

IATA

15. REGULATORY INFORMATION

TSCA

TSCA: Listed in TSCA

U.S. Regulations:

Sara (311, 312) hazard class:

Canada

WHMIS hazard class: Non-controlled

16. OTHER INFORMATION

NFPA

Health: 1  Flammability: 1  Instability: 0

HMIS

Health: 1  Flammability: 1  Physical Hazard: 0

Reason for revision: Not applicable
Prepared by: Health & Safety

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Section 1
SAFETY
SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow the respiratory precautions mentioned above.

RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.
1.1.1 Safety-Alert Signs

This manual contains Safety-Alert Signs, as defined below, which must be followed to reduce the possibility of improper service damage to the equipment or personal injury. Read and follow all Safety-Alert Signs included in this manual.

NOTE defines an operating procedure, condition, etc. which is essential to highlight that contains useful or important information.

EMERGENCY is used for the identification of safety equipment, first aid, or emergency egress locations.

NOTICE used to convey safety information on labels and signs.

CAUTION is indicative of a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

WARNING

Potentially hazardous situations that could result in death or serious injury are indicated by the word WARNING.

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
1.3.1 Operating Safety

**WARNING**

Familiarity and proper training are required for the safe operation of this equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls.

1.3.2 NEVER operate this machine in applications for which it is not intended.

1.3.3 NEVER allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the risks and hazards associated with it.

1.3.4 NEVER touch the engine or muffler while the engine is on or immediately after it has been turned off. These areas get hot and may cause burns.

1.3.5 NEVER use accessories or attachments that are not recommended by AEC. Damage to equipment and injury to the user may result.

1.3.6 NEVER

1.3.7 NEVER leave machine running unattended.

1.3.8 DO NOT run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.

1.3.9 ALWAYS remain aware of moving parts and keep hands, feet, and loose clothing away from the moving parts of the equipment.

1.3.10 ALWAYS keep hands, feet, and loose clothing away from moving parts of the machine.

1.3.11 ALWAYS read, understand, and follow procedures in the Operator’s Manual before attempting to operate the equipment.

1.3.12 ALWAYS be sure operator is familiar with proper safety precautions and operation techniques before using machine.
1.3.13 **ALWAYS** close fuel valve on engines equipped with one when machine is not being operated.

1.3.14 **ALWAYS** store the equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
1.3 Engine Safety

1.4.1 Engine Safety

_DANGER_

Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine owner’s manual and the safety guidelines below. Failure to follow the warnings and safety guidelines could result in severe injury or death.

1.4.2 DO NOT run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.

1.4.3 DO NOT smoke while operating the machine.

1.4.4 DO NOT smoke when refueling the engine.

1.4.5 DO NOT refuel a hot or running engine.

1.4.6 DO NOT refuel the engine near an open flame.

1.4.7 DO NOT spill fuel when refueling the engine.

1.4.8 DO NOT run the engine near open flames.

1.4.9 ALWAYS refill the fuel tank in a well-ventilated area.

1.4.10 ALWAYS replace the fuel tank cap after refueling.

1.4.11 ALWAYS keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.
1.5.1 Service Safety

**WARNING**

*Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.*

1.5.2 **DO NOT** attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.

1.5.3 **DO NOT**

1.5.4 **DO NOT**

1.5.6 **DO NOT** use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.

1.5.7 **ALWAYS** turn engine off and remove key from machine before performing maintenance or making repairs.

1.5.8 **ALWAYS**

1.5.9 **ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

1.5.10 **ALWAYS** replace worn or damaged components with spare parts designed and recommended by AEC Corporation.

1.5.11 **ALWAYS**

1.5.12 **ALWAYS** switch off the power supply at the battery disconnect before adjusting or maintaining the electrical equipment.

1.5.13 **ALWAYS** keep the machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.
The safety and operation labels shown in this section are placed in important areas on the machine to draw attention to potential safety hazards and service information. Should any of these labels become unreadable or damaged, replacement labels can be ordered from your distributor.

**NOTE**

This label identifies the tank used for retardant spray agents (i.e., water-based retardants) only on the machine. **NO OTHER** non-retardant chemicals nor fuel is to be in this tank.

**CAUTION**

For diesel-fueled machines, this label identifies the tank used for **DIESEL** fuel only in the machine. **NO OTHER** type of fuel is to be used in this tank.

**CAUTION**

This label identifies the tank used for **HYDRAULIC OIL** only in the machine. **NO OTHER** type of fluid is to be used in this tank.

**NOTE**

This label identifies the valve that operates the finish tube only.
1.5, continued
Safety and Operation Labels

**NOTE**
This label warns the operator of the potential hazard of severe burns from hot coolant if radiator is still hot and the radiator cap is removed before the coolant has had sufficient time to cool down.

**NOTE**
This label identifies the location of the valve that operates the travel tubes only.

**NOTE**
This label identifies the valve that operates the steering leg only.

**NOTE**
This label identifies the adjustment nut location that raises and lowers the front finish tube.

**WARNING**
This label warns the operator of the potential hazard of severe burns from hot coolant if radiator is still hot and the radiator cap is removed before the coolant has had sufficient time to cool down.

**NOTE**
This label identifies the location of the fuse box that contains the associated fuses that make up the internal electrical circuit of various components in the wiring system.
Section 2
OPERATIONS
SECTION 2
OPERATIONS

NOTE

This machine is built with user safety in mind. However, it can present hazards if improperly operated and serviced. Follow operating instructions carefully.

If you have any questions about operating or servicing this equipment, please contact your Allen Engineering Dealer or AEC Customer Service at 800-643-0095 or 870-236-7751.
2.1 Introduction

2.1.1 Description

The Triple Roller Tube Paver (TRTP) is a simple, but effective, paving machine. This particular model is the largest of the TRTP family. The model 255CD paver is the paver of choice due to the fact of its optional accessories such as front and rear walkways as well as a gang vibration system for concrete consolidation. This machine also comes with a spray vibration system which is a standard option.

Your machine is built from heavy duty steel for reliability and strength. The end frames and overhead truss-work are strongly built for the longer machines as well as the smaller ones. A weight box on the idle-end frame helps to balance out the machine due to the weight on the motor end frame.

This machine is built for the ultimate quick finish for a reasonable investment. The roller tubes on this machine are made of rugged 10” (254mm) diameter tubing. We can customize the length of your machine from 12 ft (3.05m) thru 34 ft (10.97m) in any 2 ft (.61m) increment. No matter what conditions your job may be under, Allen Concrete Pavers (ACP) can make the machine to fit your needs.

Your machine primarily runs on a 44 HP, 4 cylinder, liquid cooled diesel engine. The liquid cooled engine is electrically started. All hydraulic components function mainly from the 14+3.2 GPM heavy-duty tandem pump mounted to the engine. The hydraulic and fuel tanks are constructed of a heavy-duty steel for durability.

The front paving tube has a variable speed control with forward and reverse movement. The maximum setting for the finishing tube is 146 RPM’s and the maximum setting for the travel tube is 20 RPM’s. However, this machine can finish an astounding 382 surface feet per minute.
2.2 Start Up Procedures

2.2.1 Before Starting Procedures
Before starting the machine check for the following:

1) Oil level in engine(s).
2) Hydraulic oil level in hydraulic tank.
3) Fuel level in fuel tank.
4) Condition of hydraulic oil and air filters.
5) Verify that daily maintenance has been performed.
6) Verify all controls are in the neutral position.

2.2.2 Starting Procedures
Before starting the machine, refer to Figure 2.2.1 and 2.3.1 for location and identification of operational and visual controls pertaining to the operation of the TRTP.

1) Turn key counter-clockwise until the “GLOW PLUG” turns off.
2) Turn ignition switch key to the start-position, immediately release key when engine starts. Allow engine and hydraulic components to warm up for 5 minutes before operating machine.

⚠️ CAUTION ⚠️

Operating the starter for more than 5 seconds can damage the starter or engine. If engine fails to start release the switch and wait 15 seconds before operating starter again.
2.2, continued
Start Up Procedures

SECTION 2
OPERATIONS

OIL PRESSURE
CHARGE
WATER TEMP
GLOW PLUG
KEY SWITCH
HOURMETER

FIGURE 2.2.1
VIEW OF CONTROL BOX
2.3.1 Operating the TRTP

1) Location of Operating Controls

[A] Finish Tube Control
[B] Steering Leg Control
[C] Travel Tube Control
[D] Front Tube Adjustment
[E] Hydraulic Filter Gauge
[F] Engine Control Box
[G] Water Pump Control
[H] Throttle Control

FIGURE 2.3.1
Operations Control Components
2) The operation of this machine is easy to learn and is simple on the job. Without a whole lot of components and parts, with the exception of hoses and hydraulic components, this machine is a basic concrete paver. However, without proper instruction on how to operate this machine, it can very easily become hazardous to the surrounding workers, as well as, being unable to finish a good pour.

- After you start the engine, increase the throttle to 80% of the maximum engine RPM.
- To start paving in the forward motion, push both of the operator levers up.
- For paving in the reverse mode, pull the levers down.
- To make all the tubes travel in the same direction (whether forward or reverse), push one lever up and pull the other down.
- To turn the machine pull the steering leg lever all the way down. Once you have turned the desired distance, push the lever back up to lift up the leg.

**CAUTION**

*DO NOT* use excessive pressure on the controls. Excessive pressure does not increase the reaction time of the machine and can damage controls.

2.3.2 **Stopping The Machine**

Return all the tube control levers to the neutral position.
2.3.3 Finish Tube Height Adjustment

To raise or lower the front finish tube do the following:

• Remove the tube adjustment lock(A) from the end handle.
• To raise the tube, turn the adjustment nut(B) in a clockwise rotation.
• To lower the tube, turn the adjustment counter-clockwise.

**NOTE:** The factory sets this tube at 1/8" above grade. There is a scribe line on the motor and idle end handles at the point where the tube is set. See Fig 2.3.4

![FIGURE 2.3.3](image)

Front Tube Adjustment

![FIGURE 2.3.4](image)

Pointer Scribe
### Tube Changing Procedures

**Step 1:** Remove the cover off of the idle end frame.

**Step 2:** Take the 1” nuts off of the idle end tubes.

**Step 3:** Loosen set screws on bearings.

**Step 4:** Take the 16 bolts off the idle end frame that connect the framework to the end frame.  
**NOTE:** Make sure that the framework is supported by a crane to insure that the framework does not collapse.

**Step 5:** Remove the idle end frame.

**Step 6:** Using the same method as in step 4, take the framework apart or add to section by section until the desired length is achieved.

**Step 7:** Remove the 1/4” bolts from the hex drivers.

**Step 8:** Pull the tube out of the motor end frame, repeat this process with all three tubes.

**Step 9:** Replace with the new length tubes.

**Step 10:** Replace 1/4” bolts into the hex drivers.

Starting with Step 6, reverse the process using the appropriate framework required. As the tube length changes, the framework obviously will change also.
Section 3
SERVICE
3.1 Periodic Maintenance Schedule

The table below lists basic machine and engine maintenance. Refer to OEM engine manufacturer's Operation Manual for additional information on engine maintenance. A copy of the engine operator's manual was supplied with the machine when it was shipped.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DAILY</th>
<th>EVERY 20 HRS</th>
<th>EVERY 50 HRS</th>
<th>EVERY 100 HRS</th>
<th>EVERY 300 HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic Oil Level</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Level</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoses and Fittings</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Hardware</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Engine Oil</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grease Bearings</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Fuel Filter</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Oil Filter</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Check Valve Clearance</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Air Filter</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Motors</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Steering Leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Hydraulic Filters</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2 Bearings

The bearings for the roller tubes must be greased approximately every 20 hours. Please note the location of the grease fittings below.

**FIGURE 3.2.1**
MOTOR END FITTINGS

**FIGURE 3.2.2**
IDLE END FITTINGS
3.3 Spray Tips
Make sure before every pour that all the finish tube spray tips and nozzles are not clogged and are in working order. Also make sure that they are drip free when the spray system is not on.
3.4 Inline Spray Filter
Make sure before every pour and before the filling the tank that the inline spray filter is free of contaminants. If the filter needs to be replaced, an AEC filter replacement is available.

FIGURE 3.4.1
INLINE SPRAY FILTER

Replacement Filter: 048383
3.5 Air Breather

Make sure that the air breather is free of contaminants before each pour. This ensures the turbo will function at its peak efficiency.

FIGURE 3.5.1
AIR FILTER

Air Breather Location
3.6 Engine Oil

Check engine oil daily.

FIGURE 3.6.1
Engine Oil
3.7 Oil Filter
Replace oil filter approximately every 100 operating hours.

FIGURE 3.7.1
Oil Filter

FIGURE 3.7.2
Fuel Filter
Section 4
PARTS
This section contains the illustrated drawings and parts list for help in identifying and/or ordering replacement parts for your machine. Follow the instructions in the front section of this manual “Ordering Parts” when ordering replacement parts to insure prompt and accurate delivery.

⚠️ NOTE

All set screws have blue (LOC-TITE™) applied at the factory. If set screw is removed or loosened for any reason re-apply blue (LOC-TITE™).

⚠️ NOTE

All grease fittings are capped with CAP PLUG GC-5 (AEC PN 015692) to protect the fitting. If cap becomes missing or damaged replace it as soon as possible.

⚠️ NOTE

Anti-Seize is applied at the factory to all tube couplings. If these parts are disassembled re-apply a light coat of a graphite based anti-seize.
Replacement Parts Procedures

We recommend AEC quality replacement parts, available from the AEC Customer Service Department or your nearest AEC Dealer.

Part numbers are subject to change without notice. Part numbers might be different outside of the United States of America. Use part numbers listed in the applicable parts list table when you place your order. If a part number changes, the AEC Customer Service Department or your nearest AEC dealer will have the latest part number for the replacement part.

Remember when you order replacement parts, you will need your model number and serial number. These are the numbers that you have recorded in the UNIT ID section of this manual. Please order replacement parts by the appropriate part number, not the key number.

This manual contains an illustrated parts list for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.

2. Include correct description and part number from the “PARTS” Section 4.

3. Specify exact shipping instructions, including the preferred routing and complete destination address.

4. DO NOT return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.

5. When placing an order, please contact the AEC Dealer nearest you.

**NOTE**

All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication.
4.1 Illustration

Power Unit Assembly

Engine Filter Kit - 049347
Oil Filter - 16271-32090
Fuel Filter - 70000-43081
Air Filter - 17351-11083
## 4.1 Parts List
### Power Unit Assembly

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>012725</td>
<td>ISOLATORS, RUBBER MOUNTS</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>028556</td>
<td>ISOLATOR, RUBBER</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>029229</td>
<td>PUMP, TANDEM TRTF</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>029245</td>
<td>BRACKET, ENGINE TRTF</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>029418</td>
<td>PUMP, HYPRO 6500C-R</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>037777</td>
<td>ASSY, FUEL FILTER</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>037791</td>
<td>TANK, OVERFLOW W/ BRACKET</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>039787</td>
<td>PLATE, MOUNT WATER PUMP TRTP</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>039788</td>
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4.2 Illustration

Motor End
## 4.2 Parts List
### Motor End

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## 4.2 Parts List
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SECTION 4
PARTS

4.3 Illustration
Idle End

[Diagram of an equipment with numbered parts]
## 4.3 Parts List

**Idle End**

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4.4 Illustration

Spray Bar Assembly

Parts:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Components:
- A
- B
- C
- D
- E
- F
4.4 Parts List
Spray Bar Assembly

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## 4.5 Parts List

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4.6 Illustration
Scraper Assembly

ANGLE - SEE SCRAPER MATRIX

TIVAR - SEE SCRAPER MATRIX
### 4.6 Parts List

**Scraper Assembly**

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4.7 Illustration
Front Walkway Assembly
## 4.7 Parts List

### Front Walkway Assembly

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4.8 Illustration
Rear Walkway Assembly
### 4.8 Parts List

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#### Rear Walkway Assemblies

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SECTION 4
PARTS

4.9 Illustration
Ballast Tube Assembly
### Ballast Tubes

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**NOTE**

A rear walkway must be installed on the machine prior to installing a ballast tube.
4.10 Illustration
Hydraulic Schematic
4.10 Illustration
Hydraulic Schematic

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4.11 Illustration
Wiring Schematic

SECTION 4
PARTS

[Diagram with labels and connections]

Charge Lamp
Oil Lamp
Water Temp Lamp
Glow Lamp

HR METER
Starter Switch
10A
0.5 BR
SECTION 4
PARTS

4.12 Illustration
Idle End Grease Fittings (Oct 2014)
### 4.12 Parts List

**Idle End Grease Fittings (Oct 2014)**

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## 24’ Access Platform Assembly Parts List

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RH End Access Platform Assembly Illustration
### RH End Access Platform Assembly

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## LH End Access Platform Assembly

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## 4’ Access Platform Assembly
### Parts List

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2’ Access Platform Assembly Illustration
## 2’ Access Platform Assembly
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Vibrator Channel Bottom Covers

Illustration
# Vibrator Channel Bottom Covers

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4.13 Illustration
Spray Schematic
Title Page ........................................................................................................................................5-1
Table of Contents .........................................................................................................................5-2
Vibration Operations ..................................................................................................................5-3

5.1 ..........Butterfly Assembly .................................................................................................5-4 thru 5-5
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ALLEN
CONCRETE PAVERS™
Vibration Operations

1) Start the engines normally as described on page 2-4.

2) Bring the operator engine to operating RPM.

3) Activate the switch on the side of the engine control box to bring the idle engine to operating RPM.

4) Turn the Vibrator ON/OFF lever to turn the vibrators “on” when entering concrete and “off” when exiting concrete. (Leaving the vibrators on out of concrete for more than 3 minutes can cause internal damage due to overheating.)

5) Use the Cylinder UP/DN lever to lower the vibrators into the concrete and raise them out.

6) Use the Vibrator Speed Control to control the amount of VPM’s into the concrete.

Vibrator Technical Data

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## 5.1 Parts List
### Butterfly Assembly

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049307; 10/08
5.2 Illustration
Vibrator Assembly
### 5.2 Parts List

**Vibrator Assembly**

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Vibration Rack Assembly

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5-10

SECTION 5
VIBRATION

5.5 Illustration
Vibrator Shaft Assembly

It is imperative during assembly that the rotation of the downward gearbox shaft be **counter-clockwise** to prevent the vibrator’s internal components from “unwinding” and coming apart causing vibrator failure.
## 5.5 Parts List
### Vibrator Shaft Assembly

<table>
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<tr>
<th>ITEM</th>
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<td>FSTN, HHCS 3/8-16 X 1-1/4 GR 5</td>
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<td>3</td>
<td>010089</td>
<td>FSTN, LW 1/4</td>
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<td>012869</td>
<td>FSTN, SHSS 1/4-20 X 3/8</td>
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<td>5</td>
<td>015813</td>
<td>KEY, 3/16&quot; SQ X 1&quot; LG</td>
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<td>020542</td>
<td>FSTN, NUT STOVER LOCK 1/4-20</td>
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<td>7</td>
<td>033711</td>
<td>FSTN, HHCS 1/4-20 X 2 3/4</td>
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<td>8</td>
<td>044858</td>
<td>GEARBOX, AD5 F/ VIBRATORS</td>
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<td>044859</td>
<td>COUPLER, DRIVE SHAFT F/ VIB RACK</td>
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<td>SHAFT, 15 1/2&quot; DRIVE</td>
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<td>PLATE, GEARBOX MOUNT RHR/LHF 14’</td>
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<td>COUPLER, JAW (685144-37240)</td>
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NOTE
See page 4-6 for complete motor end component breakdown. This illustration only shows only items that pertain to the vibration system.
### 5.6 Parts List
**Motor End Assembly**

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<td>VALVE STACK, 2-STATION PILOT CONTROL</td>
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NOTE See hydraulic schematic Page 5-21 for hydraulic component parts list.
# 5.7 Parts List

## Idle End Assembly

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<td>UNIT, CHROME GAS-HYDR TANK CAP</td>
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<td>END EXTENSION F/SPRAY BAR BRKT</td>
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049307; 10/08
NOTE:
It is not uncommon for a pendulum-type vibrator head to fail to vibrate when the motor is switched on or started. If the vibrating head does not commence vibrating immediately, tap the tip of the vibrator head sharply with a rubber mallet.
# 5.8 Parts List
## Gang Vibration Parts

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5.9 Schematic
Machine Electrical Schematic

SECTION 5
VIBRATION
SECTION 5
VIBRATION

5.10 Schematic
Vibration Hydraulic Schematic
5.10 Schematic
Vibration Hydraulic Schematic