A Checklist and Sample Specifications for Front End Loaders

HERPICC

Follow this and additional works at: http://docs.lib.purdue.edu/inltappubs

Part of the Civil and Environmental Engineering Commons

Recommended Citation
http://docs.lib.purdue.edu/inltappubs/35

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.
A CHECKLIST AND SAMPLE SPECIFICATIONS FOR
FRONT END LOADERS
2-3 cyd ARTICULATING, RUBBER TIRED, 4-WHEEL DRIVE

MAY 1983

PURDUE UNIVERSITY - SCHOOL OF CIVIL ENGINEERING
in cooperation with
INDIANA DEPARTMENT OF HIGHWAYS
INDIANA ASSOCIATION OF COUNTY COMMISSIONERS
INDIANA ASSOCIATION OF CITIES AND TOWNS
FEDERAL HIGHWAY ADMINISTRATION
Attached is a checklist and sample specifications for purchasing front end loaders for use in the maintenance of Indiana's local roads and streets.

This checklist and the sample specifications provide for individual preferences. They are not intended to dictate decisions or restrict bidding. If followed, they will assure a durable piece of maintenance equipment well suited for the uses placed on front end loaders by Indiana Counties, Cities and Towns.

A general observation of those with experience is that reducing specification requirements to obtain a lower first cost is nearly always a poor economic decision.

This information was developed by a task group on Maintenance Equipment Guidelines composed of the following:

John Dalton, Street Commissioner, Bedford
Jim Harper, Street Commissioner, Crawfordsville
Prof. Lloyd Jones, Civil Engineering, Purdue University
Sheril Page, retired, Dugger
Eugene Shurte, LaPorte County Road Supervisor
J. William Strange, Hancock County Highway Engineer
Dick Thompson, Huntington County Engineer
Reno Ulerich, retired, Kokomo
Sean Watt, Director of Division of Transportation, South Bend
Wallace W. West, Indiana Department of Highways

HERPICC is proud to acknowledge the time and effort these men put into developing these items.

A previous checklist and sample specifications for "Single and/or Tandem Axle Dump Trucks" has been published. If you wish to have a copy please contact HERPICC. If you have comments or suggestions, please write to me.

Sincerely,

Charles F. Scholer
Associate Director
HERPICC

CFS:ms
CHECKLIST

for

PREPARING BASIC 2-3 cyd ARTICULATING, RUBBER TIRED, 4-WHEEL DRIVE
FRONT END LOADER SPECIFICATIONS

The following pages contain various items to be considered when seeking
bids for front end loaders.

General description of equipment being bid.
Statement of requirement of manufacture of equipment.
Statement of standardization of all component parts of unit.
Statement of parts availability and access.
Statement of location of manufacturer and/or assembly of unit(s).
Statement of bid submitting requirements.
Statement of indemnification of local agency concerning patent devices.
Statement concerning description of term "or equal".
Statement of terms for accepting unit(s), new and used, year hold overs,
inspection of unit(s), local, state and federal requirements, disposition
of trade-in unit(s), location of units.

Bucket

Size _____ cubic yards.
Width _____ inches (must extend 3" beyond outside face of tires).
Cutting Edge or Teeth (Bolt-on) (Welded).
Corner Guards (yes) (no).
Spill Guard (yes) (no).
Automatic Leveler (yes) (no).
Bucket Type - (General Purpose) (Low Profile) (Light Material)
(Multi-Purpose 4 in 1) (Side Dump) (Extra Heavy Duty).
Grab Hooks (yes) (no).
Fork Lift Attachment (yes) (no).
Multiple Attachment Mechanism (yes) (no).
Alternate Sizes (yes) (no).
Bucket Swing _____ degrees.

Checklist April 26, 1983 HERPICC
Tipping Load - Full Turn _____ pounds.

(This capacity is with basic machine without counterweight and hydroinflation, with standard tires and standard General Purpose Bucket).

Break-Out Force - _____ pounds (Equipped same as tipping load).

Automatic Hydraulic Cylinder Kickout at maximum dump lift arm height.

Minimum distance from front of tires to front edge of bucket with maximum dumping height and at 45 degrees dump angle is _____ inches.
Vendor shall provide the following engine information:

<table>
<thead>
<tr>
<th>Vehicle Make</th>
<th>Model</th>
<th>Year</th>
</tr>
</thead>
</table>

Engine (Gasoline) (Diesel) (Natural Gas) (Propane)

<table>
<thead>
<tr>
<th>Make</th>
<th>Model</th>
</tr>
</thead>
</table>

Number of Cylinders stroke-cyle.

<table>
<thead>
<tr>
<th>Bore and Stroke</th>
<th>Displacement cubic inches</th>
</tr>
</thead>
</table>

Taxable Horse Power R.P.M.’s.

<table>
<thead>
<tr>
<th>Continuous (Net) Flywheel Horse Power</th>
<th>R.P.M.’s.</th>
</tr>
</thead>
</table>

Governed Speed R.P.M.’s.

<table>
<thead>
<tr>
<th>Peak Torque</th>
<th>ft. lbs. @ R.P.M.’s.</th>
</tr>
</thead>
</table>

Compression Ratio:

<table>
<thead>
<tr>
<th>Carburetion</th>
<th>Cooling System Radiator Capacity quarts.</th>
</tr>
</thead>
</table>

Overflow recovery system. (Yes) (No)

<table>
<thead>
<tr>
<th>Corrosion Resistor</th>
<th>Type</th>
<th>Location</th>
</tr>
</thead>
</table>

Silicone Hose System. (Yes) (No)

<table>
<thead>
<tr>
<th>Engine Block Heater(s)</th>
<th>Number</th>
<th>Size</th>
<th>Watts</th>
</tr>
</thead>
</table>

Type Location

Weatherhead Connection (Yes) (No) Location

Radiator Fan. (Standard) (Reversible)
Filters Air-Type Location

Prefilter (Yes) (No) Type Location

Oil - Number of filters Location

Oil - Extra Capacity (Yes) (No) Type Location

Fuel - (Yes) (No) Type Location

Water (Yes) (No) Type Location

Hydraulic External Mounted (Yes) (No)

Starter Rated Heaviest Duty for this application by manufacturer.

Alternator/Generator amperes (Brush) (Brushless) Make & Model

Regulator (Integral) (External)

Emergency Shut Down Warning System

High Water Temperature - Low Oil Pressure

- Low Hydraulic Pressure - Low Air Pressure

visual and audible warning instruments.

Ignition (Compression Ignited) (Spark Ignited)

Batteries Quantity (Standard) (Maintenance Free) Voltage

Ampere Hour Capacity Cold Crank Power @ 0 degree F.

Dry weight (each) Group Number

Exhaust System

Muffler - (Standard) (Stainless Steel) (Horizontal) (vertical)

Checklist April 26, 1983

HERPICC
### Electrical System

**Headlights - Type and Location**

**Tail Lights - Type & Location**

**Working Lights - Type & Location**

**Watts** ________________ **Candle Power** ________________

**Strobe Lights - Candle Power** ________________ *(Fixed) (Variable)*

**Separate Power Source** *(Yes) (No)*

**Mounting Location(s)**

### Transmission *(Manual) (Automatic) Model*

- **Number of Speeds** Forward ____________ Reverse ____________
- **Number of Speed Ranges** ____________
- **Top Speed Forward** ____ **Top Speed Reverse** ____ in each Range.

**Auxillary Cooler** *(Yes) (No)* **Temperature Gauge** *(Yes) (No)*

**Auxillary Filter** *(Yes) (No)*

**Extended Warranty** *(Yes) (No)*

**Operating Weight** ________________ pounds.

### Front Axle *(Standard) (No Spin)*

### Rear Axle Manufacture ____________ Model ____________ *(Standard) (No Spin)*

- *(Hydraulically) (Air) Actuated Locking Mechanism*
- *(External) (Internal) Planitaries*

**Oscilating** *(Yes) (No)*

---

**Checklist** April 26, 1983 **HERPICC**
Tires (radial) (Tubeless) (Tube Type)

Tread Style - L-2___________________ L-3__________________.

Tire Size - ___________ Ply_________ Quality__________.

Vehicle Clearance Circle (outside diameter) ____________________.

Wheelbase __________________

Minimum Ground Clearance ____________________.

Brake System

(Caliper) (Disk Type) (4-wheel Dual Air/Hydraulic)

(4-wheel Power Actuated/Wet)

Parking Brakes Specifications ____________________.

Automatic Brake Set in event of Low Air Pressure.

Automatic Transmission Disconnect.

Spitter Valves (Yes) (No)

Air Dryer (Yes) (No) (Electric) (Alcohol)

Pancake Clearance from inside of tires ___________ inches.

Fuel Tank

Size of tank ___________ gallons.

Tank Marking (Diesel #1 or #2) (Gasoline - Regular, Unleaded, etc.)

Sight gauge on tank (Yes) (No)

Security Package (Yes) (No)

Lockable Tank Caps (Fuel) (Hydraulic) (Yes) (No)

Engine Side Panels (Yes) (No)

Radiator (Yes) (No)

Checklist April 26, 1983 HERPICC
Cab Ventilated and Insulated

Number of Doors (1) (2)
  (Front Mounted) (Rear Mounted)

Tinted Glass (Yes) (No) (Windshield Only) (All Windows)

Inside Dome Light (Manual Operated) (Door Operated)

Cigar Lighter (Yes) (No)

Seat (Standard) (Adjustable Suspension)

Horn(s) (Electric) (Air)

Heater and Defroster (Standard) (Heavy Duty) (Front) (Rear)

Air Conditioning (Yes) (No) (Standard) (Deluxe)

Sun Visors (Yes) (No)

Radio (Yes) (No) (AM) (AM/FM)

Windshield Wipers & Washers (2 Speed) (Intermittent) (Electric)
  (Air) (Front) (Rear)

Emergency Access Opposite Side from Door (Yes) (No)

Dual Mirrors - Size __________ * __________.
  Location (Inside) (Outside)

Adjustable Convex Mirror on Right Side (Yes) (No) Size ________.

Backup Alarm (Yes) (No) Type ____________________________.

Exterior Grab Handles Type __________________________

Fenders (Yes) (No) (Front) (Rear)

Checklist April 26, 1983 HERPICC
Dash Mounted Gauges

Fuel (Switchable to either tank) (Separate gauge each tank)
Tachometer (Yes) (No)
Hourmeter (Yes) (No)
Ammeter (Light) (Needle Type) (Calibrated)
Oil Pressure (Light) (Needle Type) (Calibrated)
Water Temperature (Light) (Needle Type) (Calibrated)
Air Pressure (Needle Type) (Calibrated)
Transmission Temperature (Light) (Needle Type) (calibrated)
Hydraulic Oil (Pressure) (Temperature) (Yes) (No)

Warning Lights

High Water Temperature/Low Oil Pressure Emergency Shut Down Warning System shall be dash mounted. (Yes) (No)

Paint Color_________________________ Type__________________________.

Preparation_______________________________.

Warranty of Unit

(Extended Warranty) (Purchaser Designated Option)
(Maufacturers Standard) (Repair Guarantee)
(Scheduled Maintenance Guarantee)
(Guaranteed Minimum Repurchase Price Schedule)
Description_______________________________.

Manuals Operators, parts and service (Number of each required_______).

Delivery Time

List of number of weeks required for delivery of Unit(s) from date of order______________ weeks.

Checklist April 26, 1983 HERPICC