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## Test 1170: Steiger Cougar II Diesel

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1170 – STEIGER COUGAR II DIESEL

## DRAWBAR PERFORMANCE

| Hp | Draw-bar pull lbs | Speed miles per hr | Crankshaft speed rpm | Slip of drivers % | Fuel Consumption Gal per hr | Lb per hp-hr | Hp-hr per gal | Temp Degrees F Cool-ing med | Air wet bulb | Air dry bulb | Barometer inches of Mercury |
|----|-------------------|--------------------|----------------------|-------------------|-----------------------------|--------------|---------------|-----------------------------|--------------|--------------|-----------------------------|
|----|-------------------|--------------------|----------------------|-------------------|-----------------------------|--------------|---------------|-----------------------------|--------------|--------------|-----------------------------|

### VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

#### Maximum Available Power—Two Hours—6th Gear (3-Hi)

|        |       |      |      |      |        |       |       |     |    |    |        |
|--------|-------|------|------|------|--------|-------|-------|-----|----|----|--------|
| 222.16 | 14508 | 5.74 | 2199 | 3.96 | 16.900 | 0.527 | 13.15 | 179 | 33 | 39 | 28.915 |
|--------|-------|------|------|------|--------|-------|-------|-----|----|----|--------|

#### 75% of Pull at Maximum Power—Ten Hours—6th Gear (3-Hi)

|        |       |      |      |      |        |       |       |     |    |    |        |
|--------|-------|------|------|------|--------|-------|-------|-----|----|----|--------|
| 182.43 | 11160 | 6.13 | 2323 | 2.84 | 14.289 | 0.542 | 12.77 | 178 | 39 | 46 | 28.854 |
|--------|-------|------|------|------|--------|-------|-------|-----|----|----|--------|

#### 50% of Pull at Maximum Power—Two Hours—6th Gear (3-Hi)

|        |      |      |      |      |        |       |       |     |    |    |        |
|--------|------|------|------|------|--------|-------|-------|-----|----|----|--------|
| 128.44 | 7597 | 6.34 | 2384 | 2.19 | 11.086 | 0.598 | 11.59 | 176 | 32 | 35 | 29.240 |
|--------|------|------|------|------|--------|-------|-------|-----|----|----|--------|

#### 50% of Pull at Reduced Engine Speed—Two Hours—8th Gear (4-Hi)

|        |      |      |      |      |       |       |       |     |    |    |        |
|--------|------|------|------|------|-------|-------|-------|-----|----|----|--------|
| 129.59 | 7644 | 6.36 | 1444 | 1.94 | 8.667 | 0.463 | 14.95 | 175 | 35 | 39 | 29.170 |
|--------|------|------|------|------|-------|-------|-------|-----|----|----|--------|

### MAXIMUM POWER WITH BALLAST

|        |       |      |      |       |                 |     |    |    |        |
|--------|-------|------|------|-------|-----------------|-----|----|----|--------|
| 181.67 | 26432 | 2.58 | 2287 | 15.00 | 3rd Gear (2-Lo) | 180 | 36 | 42 | 28.980 |
| 217.88 | 24015 | 3.40 | 2198 | 8.19  | 4th Gear (2-Hi) | 178 | 33 | 37 | 28.800 |
| 228.15 | 19259 | 4.44 | 2197 | 5.38  | 5th Gear (3-Lo) | 179 | 32 | 36 | 28.800 |
| 227.31 | 14830 | 5.75 | 2200 | 3.71  | 6th Gear (3-Hi) | 178 | 33 | 37 | 28.780 |
| 226.11 | 11244 | 7.54 | 2199 | 2.90  | 7th Gear (4-Lo) | 180 | 33 | 38 | 28.820 |
| 221.84 | 8609  | 9.66 | 2201 | 2.24  | 8th Gear (4-Hi) | 178 | 33 | 37 | 28.820 |

### VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 6th Gear (3-Hi)

|                      |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|
| Pounds Pull          | 14830  | 16382  | 17405  | 18063  | 17770  | 15723  |
| Horsepower           | 227.31 | 224.22 | 213.02 | 191.92 | 161.03 | 119.47 |
| Crankshaft Speed rpm | 2200   | 1977   | 1773   | 1543   | 1315   | 1097   |
| Miles Per Hour       | 5.75   | 5.13   | 4.59   | 3.98   | 3.40   | 2.85   |
| Slip of Drivers %    | 3.71   | 4.52   | 4.84   | 4.83   | 4.83   | 4.20   |

### TRACTOR SOUND LEVEL (with cab) db (A)

|   |      |
|---|------|
| Maximum Available Power 2 Hours             | 80.0 |
| 75% of Pull at Max. Power 10 Hours          | 81.5 |
| 50% of Pull at Max. Power 2 Hours           | 82.5 |
| 50% of Pull at Reduced Engine Speed 2 Hours | 76.0 |
| Bystander 10th Gear (5-Hi)                  | 96.0 |

### TIRES, BALLAST AND WEIGHT

|   | With Ballast          | Without Ballast                           |
|---|-----------------------|---|
| <b>Rear Tires</b>                       | —No., size, ply & psi | Four 23.1-34;8;<br>14 & 12                |
| <b>Ballast</b>                          | —Liquid<br>Cast Iron  | None<br>23 lb each<br>None                |
| <b>Front Tires</b>                      | —No., size, ply & psi | Four 23.1-34;8;<br>14 & 12                |
| <b>Ballast</b>                          | —Liquid<br>Cast Iron  | 280 lb each<br>26 lb each<br>None<br>None |
| <b>Height of drawbar</b>                | 16 inches             | 16 inches                                 |
| <b>Static weight with operator—rear</b> | 11075 lb              | 10985 lb                                  |
| <b>front</b>                            | 16920 lb              | 15705 lb                                  |
| <b>total</b>                            | 27995 lb              | 26690 lb                                  |

## Department of Agricultural Engineering

**Dates of Test:** November 20, to November 27, 1974

**MANUFACTURER:** STEIGER TRACTOR, INC., FARGO, NORTH DAKOTA

**FUEL, OIL AND TIME** Fuel No 2 Diesel Cetane No 51.9 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60°** 0.8315 **Weight per gallon** 6.923 lb **Oil SAE 30 API service classification** CD, CC, CB, CA, SE, SD, SC and SB **To motor** 6.069 gal **Drained from motor** 4.290 gal **Transmission and Power Divider** 303 oil or equivalent oil **Front and rear axle SAE 90** **Total time engine was operated** 39½ hours

**ENGINE** Make Caterpillar 3306 Diesel Type six cylinder with turbo-charger **Serial No** 66D11434 **Crankshaft Mounted** lengthwise **Rated rpm** 2200 **Bore and stroke** 4¾" x 6" **Compression ratio** 17½ to 1 **Displacement** 638 cu in **Cranking system** 12 volt electric **Lubrication pressure** Air cleaner pre-cleaner and two replaceable dry type treated paper elements, one primary and one safety **Oil filter** one replaceable spin on cartridge **Oil cooler** engine coolant heat exchanger **Transmission and power divider** cooled by a separate radiator **Fuel filter** one strainer and one replaceable spin-on cartridge **Muffler** vertical **Cooling medium temperature control** thermostat

**CHASSIS** Type four-wheel drive **Serial No** 20600 **Tread width** rear 131.6" to 71.8" front 71.8" to 131.6" **Wheel base** 122" **Center of gravity** (without operator or ballsat, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 71.2" Vertical distance above roadway 41.8" Horizontal distance from center of rear wheel tread 0" to the right / left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** first 1.7 second 2.2 third 2.8 fourth 3.5 fifth 4.5 sixth 5.7 seventh 7.4 eighth 9.4 ninth 11.8 tenth 15.0 reverse 1.7 and 2.2 **Clutch** dry double disc operated by foot pedal **Brakes** caliper brake on drive line operated hydraulically by foot pedal **Steering** hydrostatic **Turning radius** 266" (on concrete surface without brake right 266" left 266" **Turning space diameter** (on concrete surface without brake right 585" left 585")

**REPAIRS OR ADJUSTMENTS** No repairs or adjustments.

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure.

First and second gears were not run as it was necessary to limit the pull in third gear due to excessive slippage.

Ninth and tenth gears were not run as test procedure requires only six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1170.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers