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January 1972

Test 1104: Deutz D55 06 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1104 - DEUTZ D55 06 DIESEL

POWER TAKE-OFF PERFORMANCE

| Hp | Crank- shaft speed rpm | Fuel Consumption | | Hp-hr per gal | Temperature Degrees F | | | Barometer inches of Mercury |
|--|---------------------------------|------------------|--------------------|---------------------|-----------------------|--------------------|--------------------|-----------------------------------|
| | | Gal per hr | Lb per hp-hr | | Cooling medium | Air wet bulb | Air dry bulb | |
| MAXIMUM POWER AND FUEL CONSUMPTION | | | | | | | | |
| Rated Engine Speed—Two Hours (PTO Speed—600 rpm) | | | | | | | | |
| 56.08 | 2300 | 3.281 | 0.408 | 17.09 | air-cooled | 69 | 75 | 28.773 |
| Standard Power Take-off Speed (540 rpm)—One Hour | | | | | | | | |
| 52.88 | 2071 | 2.976 | 0.392 | 17.77 | air-cooled | 70 | 75 | 28.770 |
| VARYING POWER AND FUEL CONSUMPTION—TWO HOURS | | | | | | | | |
| 49.83 | 2403 | 3.006 | 0.420 | 16.58 | air-cooled | 69 | 75 | |
| 0.00 | 2474 | 1.017 | | | air-cooled | 67 | 74 | |
| 25.31 | 2412 | 1.955 | 0.538 | 12.95 | air-cooled | 69 | 75 | |
| 56.45 | 2300 | 3.274 | 0.404 | 17.24 | air-cooled | 69 | 75 | |
| 12.73 | 2457 | 1.421 | 0.778 | 8.96 | air-cooled | 68 | 75 | |
| 37.67 | 2422 | 2.477 | 0.458 | 15.21 | air-cooled | 68 | 74 | |
| Av 30.33 | 2416 | 2.192 | 0.503 | 13.84 | air-cooled | 68 | 75 | 28.777 |

DRAWBAR PERFORMANCE

| Hp | Draw- bar pull lbs | Speed miles per hr | Crank- shaft speed rpm | Slip of drivers % | Fuel Consumption | | Hp-hr per gal | Temp Cool- ing med | Degrees F Air wet bulb | Air dry bulb | Barometer inches of Mercury |
|---|-----------------------------|-----------------------------|---------------------------------|-------------------------|------------------|------------|---------------------|-----------------------------|---------------------------------|--------------------|-----------------------------------|
| VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST | | | | | | | | | | | |
| Maximum Availabe Power—Two Hours—5th Gear (L4) | | | | | | | | | | | |
| 47.52 | 3440 | 5.18 | 2299 | 5.74 | 3.306 | 0.484 | 14.37 | A-cooled | 69 | 77 | 28.900 |
| 75% of Pull at Maximum Power—Ten Hours—5th Gear (L4) | | | | | | | | | | | |
| 39.17 | 2659 | 5.52 | 2417 | 4.38 | 2.860 | 0.508 | 13.69 | A-cooled | 57 | 63 | 29.100 |
| 50% of Pull at Maximum Power—Two Hours—5th Gear (L4) | | | | | | | | | | | |
| 27.26 | 1814 | 5.64 | 2429 | 2.79 | 2.261 | 0.577 | 12.06 | A-cooled | 67 | 71 | 28.950 |
| 50% of Pull at Reduced Engine Speed—Two Hours—6th Gear (S2) | | | | | | | | | | | |
| 27.59 | 1833 | 5.64 | 2011 | 2.93 | 1.974 | 0.498 | 13.98 | A-cooled | 62 | 68 | 28.995 |
| MAXIMUM POWER WITH BALLAST | | | | | | | | | | | |
| 37.13 | 6996 | 1.99 | 2406 | 14.84 | 2nd Gear (L2) | air-cooled | 67 | 73 | 28.800 | | |
| 46.36 | 5968 | 2.91 | 2300 | 10.65 | 3rd Gear (L3) | air-cooled | 66 | 71 | 28.800 | | |
| 48.84 | 4771 | 3.84 | 2297 | 8.10 | 4th Gear (S1) | air-cooled | 66 | 70 | 28.800 | | |
| 48.78 | 3540 | 5.17 | 2300 | 5.96 | 5th Gear (L4) | air-cooled | 68 | 73 | 28.900 | | |
| 48.81 | 2893 | 6.33 | 2300 | 4.82 | 6th Gear (S2) | air-cooled | 68 | 73 | 28.910 | | |
| 47.88 | 1909 | 9.41 | 2301 | 3.06 | 7th Gear (S3) | air-cooled | 68 | 73 | 28.910 | | |
| VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST | | | | | | | | | | | |
| 5th Gear (L4) | | | | | | | | | | | |
| Pounds Pull | | | | 3540 | 3709 | 3821 | 4058 | 4036 | 3862 | | |
| Horsepower | | | | 48.78 | 45.76 | 42.50 | 38.5 | 32.72 | 26.47 | | |
| Crankshaft Speed rpm | | | | 2300 | 2065 | 1866 | 1602 | 1368 | 1153 | | |
| Miles Per Hour | | | | 5.17 | 4.63 | 4.17 | 3.56 | 3.04 | 2.57 | | |
| Slip of Drivers % | | | | 5.96 | 6.15 | 6.39 | 6.89 | 6.89 | 6.89 | | |

TRACTOR SOUND LEVEL

| | dB(A) |
|---|-------|
| Maximum Available Power 2 Hours | 95.5 |
| 75% of Pull at Max. Power 10 Hours | 95.5 |
| 50% of Pull at Max. Power 2 Hours | 94.5 |
| 50% of Pull at Reduced Engine Speed 2 Hours | 90.5 |
| Bystander 8th Gear (S4) | 85.5 |

TIRES, BALLAST AND WEIGHT

| | | With Ballast | Without Ballast |
|----------------------------------|-----------------------|--------------------|--------------------|
| Rear Tires | —No., size, ply & psi | Two 16.9-30; 6; 16 | Two 16.9-30; 6; 16 |
| | —Liquid | 620 lb each | None |
| | Cast Iron | 1260 lb each | None |
| Front Tires | —No., size, ply & psi | Two 7.50-16; 6; 44 | Two 7.50-16; 6; 44 |
| | —Liquid | None | None |
| | Cast Iron | 365 lb each | None |
| Height of drawbar | | 19½ lb each | 20½ inches |
| Static weight with operator—rear | | 7110 lb | 3350 lb |
| | front | 2670 lb | 1940 lb |
| | total | 9780 lb | 5290 lb |

Department of Agricultural Engineering

Dates of Test: August 22 to September 5, 1972

Manufacturer: KLOCKNER-HUMBOLDT-DEUTZ A.G., COLOGNE, WEST GERMANY

FUEL, OIL AND TIME Fuel No. 2 Diesel Cetane No. 54.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8365 Weight per gallon 6.965 lb Oil SAE 30 API service classification SB/SE-CA/CD To motor 2.562 gal Drained from motor 2.044 gal Transmission and final drive lubricant SAE 90 Total time engine was operated 46½ hours

ENGINE Make Deutz Diesel Type 4 cylinder vertical air-cooled Serial No. F4-401/8 510579 Crankshaft Mounted lengthwise Rated rpm 2300 Bore and stroke 3.94" x 4.72" Compression ratio 17 to 1 Displacement 230 cu. in. Cranking system 12-volt electric Lubrication pressure Air cleaner dry replaceable paper element with automatic dust unloader Oil filter replaceable pleated paper cartridge Oil Cooler coil in air-cooling system Fuel filter replaceable primary paper element and replaceable secondary cartridge Muffler was used Cooling medium temperature control air-cooled

CHASSIS Type standard Serial No. 7894/7067 Tread width rear 59.6" to 74.8" front 54.8" to 74.5" Wheel base 84" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.8" Vertical distance above roadway 27.5" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio partially synchronized Advertised speeds mph first 1.4 second 2.2 third 3.2 fourth 4.2 fifth 5.5 sixth 6.6 seventh 9.6 eighth 16.2 reverse 1.6, 2.5, 3.7 and 6.2 Clutch dry disc dual clutch operated by foot pedal and hand lever for PTO Brakes internal expanding shoes operated hydraulically by two foot pedals that can be locked together Steering hydraulic with power assist turning radius (on concrete surface with brake applied) right 130" left 136" (on concrete surface without brake) right 144" left 153" Turning space diameter (on concrete surface with brake applied) right 272" left 284" (on concrete surface without brake) right 298" left 318" Belt pulley 1260 rpm at 2300 engine rpm diam 12.5" face 5.5" Belt speed 4150 fpm Power take-off 540 rpm at 2071 engine rpm.

REPAIRS AND 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 gear was not run as it was necessary to limit the pull in second gear to avoid excessive wheel slippage. Eighth gear was 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 1104.

L. F. LARSEN

Engineer-In-Charge

G. W. STEINBRUEGGE, Chairman

W. S. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

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