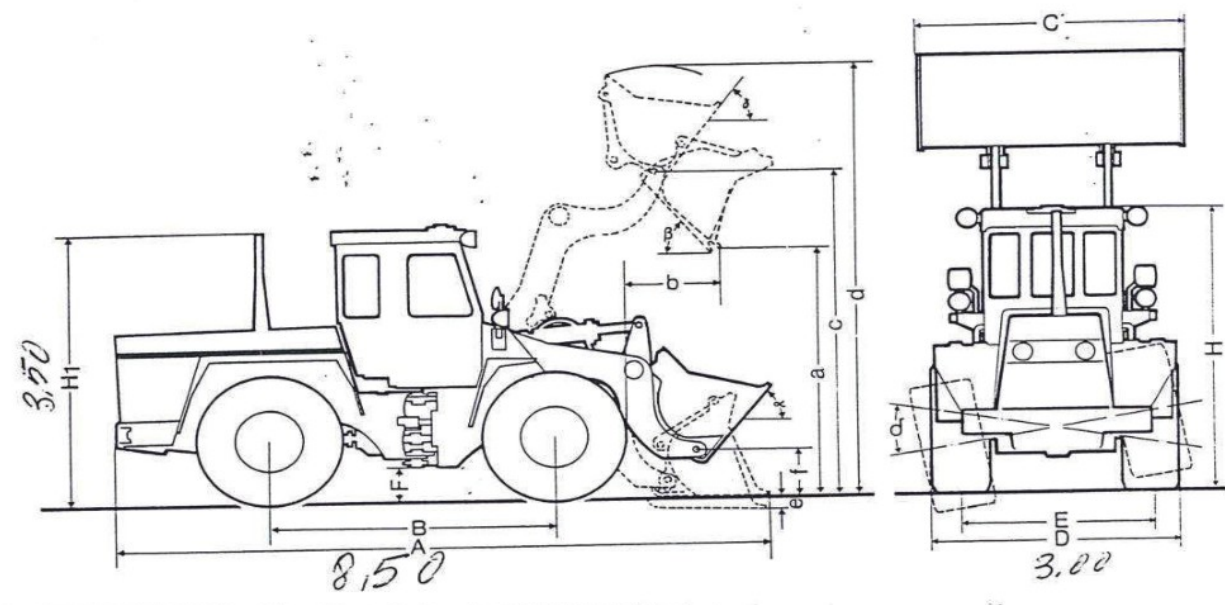


HANOMAG   
77D



LUNGHEZZA MT 8,50  
LARGHEZZA MT. 3,00  
ALTEZZA MT. 3,50  
PESO TONN 2,17

## DIMENSIONS

|                  |                          |           |
|------------------|--------------------------|-----------|
| Overall length   | - bucket carry           | 8 360 mm  |
|                  | - bucket ground          | 8 385 mm  |
| Overall width    | - with bucket            | 3 000 mm  |
|                  | - without bucket         | 3 000 mm  |
| Overall height   | - to top of exhaust pipe | 3 380 mm  |
|                  | - to top of cab          | 3 400 mm  |
| Track gauge      | - front                  | 2 291 mm  |
|                  | - rear                   | 2 291 mm  |
| Wheel base       |                          | 3 200 mm  |
| Ground clearance | - under axles            | 537 mm    |
|                  | - under centre pivot     | 460 mm    |
| Turning circle   | - outside bucket         | 13 360 mm |
|                  | - outside tyres          | 12 000 mm |
|                  | - rear edge of machine   |           |

## WEIGHTS \*

|                             | With water ballast and anti-freeze in rear tyres | Without water ballast in rear tyres |
|-----------------------------|--|-------------------------------------|
| Operating weight            | - without cab                                    | 23 080 kg                           |
|                             | - with cab                                       | 24 960 kg                           |
| Front axle load             | - bucket carry                                   | 10 720 kg                           |
| Rear axle load              | - bucket carry                                   | 12 730 kg                           |
| Permissible total weight    |  |                                     |
| Permissible front axle load |  |                                     |
| Permissible rear axle load  |  |                                     |
| Static tipping load         | - machine straight                               | 17 790 kg                           |
|                             | - machine 40° turn                               | 14 575 kg                           |

## TRAVEL SPEEDS

|                            | 1st Gear | 2nd Gear | 3rd Gear | 4th Gear |
|----------------------------|----------|----------|----------|----------|
| Forward and reverse (km/h) | 5.0      | 11.5     | 17.0     | 36.3     |

\* With 26.5 - 25 EM tyres, 3.85m<sup>3</sup> standard bucket and counterweight

## ENGINE

|  |   |             |
|--|---|-------------|
| Model/Type                                       | D 963 A 2 / turbocharged diesel   |             |
| Number of cylinders                              | six, in line  |             |
| Cycle  | four-stroke   |             |
| Combustion system                                | direct injection  |             |
| Bore   | 128 mm  |             |
| Stroke   | 140 mm  |             |
| Displacement                                     | 10 809 cm <sup>3</sup>  |             |
| Rated speed                                      | 2 200 rpm   |             |
| Low idle speed                                   | 750 to 850 rpm  |             |
| High idle speed (no load)                        | 2 250 to 2 410 rpm  |             |
| Output rating to DIN 70 020                      | 193 kW (262 HP)   |             |
| Maximum torque to DIN 70 020                     | 1 028 Nm at 1 500 rpm   |             |
| Compression ratio                                | 15.1 : 1  |             |
| Compression pressure with starter turning engine | 27 to 33 bar<br>minimum 24 bar  |             |
| Valve tip clearances:                            | Engine hot  | Engine cold |
| inlet valves                                     | 0.30 mm   | 0.30 mm     |
| exhaust valves                                   | 0.30 mm   | 0.30 mm     |
| Firing order                                     | 1 - 5 - 3 - 6 - 2 - 4   |             |
| Fuel injection pump                              | BOSCH in-line pump with variable speed governor   |             |
| Commencement of injection                        | 28° before TDC  |             |
| Fuel injectors - adjusting pressure              | 230 + 8 bar   |             |
| Fuel filtering                                   | fuel pre-filter and main fuel filter  |             |
| Lubrication system                               | forced feed lubrication   |             |
| Oil pressure - engine hot:                       | minimum 0.5 bar   |             |
| low idle speed                                   | minimum 2.5 bar   |             |
| rated speed                                      |   |             |
| Engine cooling system                            | dual-circuit, thermostatically controlled with pusher-type fan  |             |
| Coolant  | a mixture of water, anti-freeze and corrosion inhibitor   |             |
| Air induction system                             | dry air cleaner with main and safety elements, a HD cyclone separator with exhaust ejector, or extension pipe with rain cap |             |
| Max. permissible working angle                   | 35° all round   |             |

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## TRANSMISSION

|  |                  |
|--|------------------|
| Full-powershift transmission                   | 4 WG 65 II       |
| Number of forward gears                        | four             |
| Number of reverse gears                        | four             |
| Gearshift operation                            | electrohydraulic |
| Gearshift pressure                             | 10 to 12 bar     |
| Lubrication oil pressure                       | 1.5 to 3.5 bar   |
| Lubrication oil pressure relief valve opens at | 3.5 bar          |
| Torque converter                               |                  |
| Converter oil outlet pressure                  | 2.5 to 7.0 bar   |
| Pressure holding valve opens at                | 2.5 bar          |
| Converter safety valve opens at                | 10 bar max.      |

## AXLES

|            |  |  |
|------------|--|--|
| Front axle | Planetary, rigid axle, type AP - 20/R with torque proportioning differential |  |
| Rear Axle  | Planetary, rigid axle, type AP - 17/S with torque proportioning differential |  |

## BRAKES

|                           |   |                |
|---------------------------|---|----------------|
| Service brakes            | Compressed-air over hydraulic, dual braking system with disc brakes acting on all four wheels |                |
| Pressure regulator:       | cut-in pressure   | 6.2 to 6.6 bar |
|                           | cut-out pressure  | 7.35 bar       |
|                           | safety valve  | 9 to 11 bar    |
| Disc brakes               | Front Axle  | Rear Axle      |
| Make/Type                 | Perrot/485 + 285  | Perrot/485     |
| Number of brake cylinders | 16  | 8              |
| Number of brake pads      | 16  | 8              |
| Parking brake             | Mechanically operated disc brake on universal joint drive shaft                               |                |

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## STEERING

|   |  |
|---|--|
| System                                  | Articulated frame steering with a semi-block hydro-steering unit, steering pump, constant fluid flow regulation and two hydraulic steering cylinders |
| Operating pressures:                    |  |
| Steering pump and switch pump           | 180 + 20<br>- 10 bar   |
| Emergency steering pump                 | 100 bar  |
| Steering angle, both sides              | 40°  |
| Steering times, full lock to full lock: |  |
| at high idle engine rpm                 | 3.1 secs. max.   |
| at 1 500 engine rpm                     | 3.6 secs. max.   |

## LOADER HYDRAULIC SYSTEM

|   |  |  |
|---|--|--|
| System  | Two-stage system with three hydraulic pumps (2 loader and 1 switch pump) |  |
| Operating pressures:  |  |  |
| 1st stage (cut-out pressure of the switch pump)                                     | 160 to 165 bar   |  |
| 2nd stage   | 200 to 205 bar   |  |
| Number of lift cylinders  | Two  |  |
| Number of bucket cylinders  | Two  |  |
| Control valve   | Servo system controlled  |  |
| Servo system pressures:   |  |  |
| at low idle engine speed  | 24 bar minimum   |  |
| at high idle engine speed   | 26 to 28 bar   |  |
| Emergency lowering pressure with the engine stopped and the loader equipment raised | 15 to 37 bar   |  |

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LOADER EQUIPMENT\*

Lifting capacity with bucket at centre of gravity:

on ground (effective) 207 kN  
 at full height (effective) 113 kN

Breakout force at bucket cutting edge:

over bucket cylinders (effective) 163 kN  
 over lift cylinders (effective) 160 kN

Cycle times:

lift with an empty bucket 5.5 secs. max.  
 lift with a 5 000 kg bucket load 5.7 secs. max.  
 lower to ground with an empty bucket up to 3.5 secs.  
 lower to ground in float position with an empty bucket 3.5 secs. max.  
 rollback bucket at ground 1.5 secs.  
 dump bucket at full height (total cylinder rod stroke) 1.5 to 1.7 secs.

Bucket rollback angle on ground 50°  
 Bucket rollback angle at carry height 54°  
 Bucket rollback angle at full height 56°

Bucket dump angle on ground 67°  
 Bucket dump angle at full height 49°

Height from ground to bucket hinge pin 4 350 mm  
 Dump height under bucket at 45° 3 210 mm  
 Dump reach with bucket at 45° 1 350 mm

Digging depth bucket flat on ground (0°) 205 mm

Height from ground to top edge of bucket with bucket at full height and 56° rollback angle 5 665 mm

\* With 26.5 - EM tyres and a 3.85 m<sup>3</sup> standard bucket

BUCKETS

SEENNA

Bucket capacities quoted are SAE rating (nominally heaped) measured in accordance with SAE standard J 742 b. Rated capacity in cubic yards is not a direct conversion from cubic metres due to rounding to the nearest cubic yard in accordance with SAE J 742 b.

| Type                         | Capacity       |                    | Width |         |
|------------------------------|----------------|--------------------|-------|---------|
|                              | m <sup>3</sup> | (yd <sup>3</sup> ) | mm    | (in)    |
| General purpose I (standard) | 3.85           | (5.0)              | 3 000 | (118.1) |
| General purpose II           | 4.5            | (5.75)             | 3 000 | (118.1) |
| Light material I             | 5.3            | (7.0)              | 3 000 | (118.1) |
| Light material II            | 7.2            | (9.5)              | 3 200 | (126.0) |
| Heavy duty                   | 4.0            | (5.25)             | 3 000 | (118.1) |
| Rock (spade nose)            | 3.8            | (5.0)              | 3 000 | (118.1) |

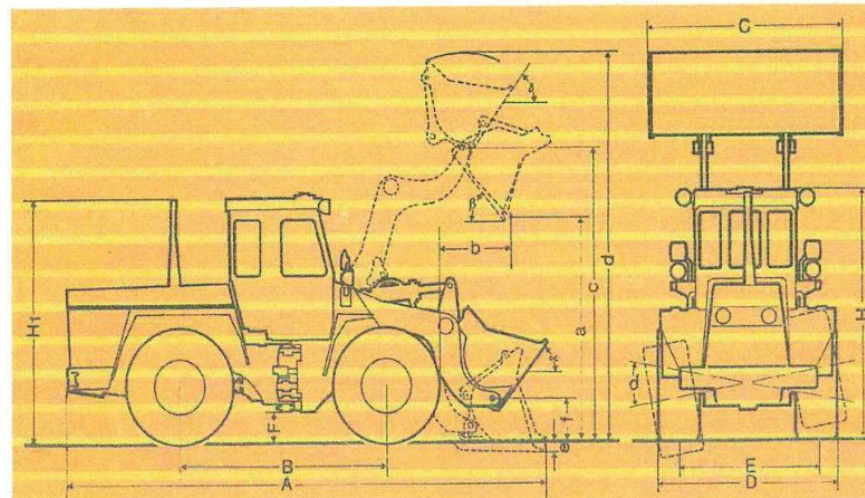
# WHEEL LOADERS

## HANOMAG 77D

SERIAL NUMBER N° 377520588



|                               |                 | <b>Dimensions for shipping</b> |
|-------------------------------|-----------------|--------------------------------|
| <b>Manufacturer:</b>          | HANOMAG         |                                |
| <b>Model:</b>                 | 77D             |                                |
| <b>Power (hp):</b>            | 262             |                                |
| <b>Weight (tons):</b>         | 24.96           | 24.96                          |
| <b>Bucket (cubic metres):</b> | 4.50            |                                |
| <b>S/N/Year:</b>              | 377520588       |                                |
| <b>Hours:</b>                 |                 |                                |
| <b>Width:</b>                 | 3.00 m/9.84 ft  | 3.00 m/9.84 ft                 |
| <b>Lenght:</b>                | 8.38 m/27.49 ft | 8.38 m/27.49 ft                |
| <b>Height:</b>                | 3.40 m/11.15 ft | 3.40 m/11.15 ft                |
| <b>Area (square meters)</b>   |                 | 25.14                          |
| <b>Volume( cubic metres):</b> |                 | 85.48                          |



A: 8.38 mt/24.49 ft  
 D: 3,00 mt/9.84 ft  
 H: 3,40 mt/11.15 ft