



922C

New light 22 T off-road dumptruck. Hydrema's uncompromising development/quality policy combined with the most up to date innovative techniques has resulted in model 922C.

A fuel efficient, stable 22 T dumptruck - featuring exceptionally low unladen weight, the best performance/weight ratio on the market and extremely good off-road characteristics.

Powerful arguments - obvious advantages!

Low unladen weight and great tractive power

922C has an exceptionally low unladen weight and a performance/weight ratio that puts it at the head of its class. It is designed as an articulated 3-axle dumptruck. The articulated chassis has pendulum bar and double hydraulic stabilisers in the pivot joint. It all contributes to great stability when operating, when performing tipping operations and even when the dumptruck is at maximum steering angle.

In a number of areas 922C breaks with traditional design principles for dumptrucks in its class. Hydrema's development team has been able to work without any carry-over from other related products. This means that all components are optimised precisely to suit 922C, a major contributory factor to the low unladen weight. A fully loaded dumptruck normally requires a hard surface on which to drive if deep wheel tracks are to be avoided. As Hydrema 922C is specially designed for driving on very soft surfaces, it can be fitted with extra wide tyres, which, combined with the dumptruck's low unladen weight, makes it possible to work both early and late in the season.

The advantages are obvious: 922C has a performance/weight ratio of 7.61 hp/gvw and lots of tractive power for driving in all types of terrain. 922C is equally effective and usable all year round and has much lower reconditioning costs.

Power

In difficult terrain a dumptruck needs lots of engine power and tractive power to its wheels. Therefore from the beginning of the design process focus has been applied to achieving optimum off-road terrain characteristics and extremely high traction. The engine is a 6.7 litre Cummins 6 cyl. Tier 3. The engine is fitted with variable speed low noise fan which adjusts the cooling needs according to any given working situation. The engine technology and the variable speed fan result in very low fuel consumption and low noise levels.

The advantages are obvious: Plenty of power, low noise level and good economy when operating with a full load – even in difficult terrain.

Tractive power

The tractive power on the 6 wheels stems from the automatic transmission with 6 forward gears and 3 reverse gears. The ultra-modern transmission is equipped with 100 % "lock-up" in all gears. This means that the electronics will lock the connection between the engine and the transmission, and give direct drive which bypasses the converter. The operator will clearly be able to feel that there is no energy loss in the transmission. In order to equalise the speed differential between the dumptruck's front and rear axle, in particular when turning, a centre differential is located in the transmission's output shaft. The centre differential has 100% differential lock when speed equalisation is not necessary. The transmission's shifting mechanism is electronically controlled via a joystick. You can choose between fully automatic or manual gearshift. The transmission is equipped with an Ergo Power shift system, which ensures a very smooth gearshift. This prevents any wheel spin and gives the best possible traction in difficult conditions.

The advantages are obvious: Superior off-road characteristics with full load combined with a much better and more comfortable ride - and fuel is conserved at the same time!

Electronic suspension and level control - and "genuine" bogie axles

The front axle is fitted with electronically controlled suspension and level control which provides superb operator comfort at all speeds. As the level control is separate on each side it retains the machine on a level. This is especially evident when driving fast round corners and on slopes. The front chassis can be raised electronically by approximately 50 mm (1.97") and thereby make progress easier in very soft terrain.

The rear axle is a heavy-duty bogie axle with reduction gear at the differential and slow-moving gear in the bogie sides. This is a very simple, maintenance-free and hard-wearing construction. Hydrema has fitted 922C with a "genuine" bogie axle because this construction has proved to have better off-road performance than normal rigid axles. On the bogie axle each wheel has much greater freedom of movement than two single axles and thus has better contact with the surface. Ground pressure is minimised considerably as all 6 wheels are in contact with the surface of the ground at all times.

In addition, the bogie axle results in a smoother ride in uneven terrain since it, so to say, "crawls" over obstacles and thus results in less vehicle movement. The vertical movement of each wheel is independent of the opposite pair of wheels.

The advantages are obvious: Greater operator comfort! Greater passability, smooth and stable ride in uneven terrain at all speeds – with the lowest possible ground pressure and least possible wear and tear on the vehicle.

Dumptruck body

The body is made of high tensile Hardox steel. The flat, sloping rear edge and a high tipping angle of 72° ensure effective tipping - material is discharged from the body quickly and easily. The powerful double acting tipping cylinders have maximum protection on the underside of the body. The tipping hydraulics with servo automatically increases the engine revs when the tipping control lever is activated, thus achieving very fast tipping cycle times of just 7.5 sec. (up) and 5.5 sec. (down). The tipping cylinders are fitted with an end brake at each end to ensure



that the body is gently lowered onto the chassis and that the tipping speed is reduced just before the maximum tipping angle is reached. By tipping the joystick forward and letting go, the "Auto-Body-Return" function causes the body to automatically descend.

The advantages are obvious: High productivity, less operator stress, longer service life for the components.

Cab

The cab has a high, central location on the vehicle, and the steeply inclined, narrow design of the hood gives the operator probably the best all-round visibility on the market: at the front of the vehicle, beside the engine and adjacent to the front wheels.

Broad, robust mirrors give the operator good rear visibility even when reversing and tipping. The cab is equipped with a climate control system, suspended seat, instructor's seat and plenty of storage space behind the operator's seat with integrated 12V and 24V electric sockets.

Gearshift and tipping function in a single joystick

When driving the dumptruck, the operator uses the steering wheel most of the time. At the same time, he has to change gear, select his direction of travel and be able to use the tipping function. In the 922C all these functions are integrated into a single joystick in the right armrest.

The advantages are obvious: The left hand is always free to operate the steering wheel while the right hand operates all other functions via the joystick. The armrest provides relief for the operator's right arm during a long working day.

Powerful hydraulic system

In 922C the hydraulic system consists of 4 hydraulic pumps. This solution has been chosen so that each hydraulic pump can be "tailored" to the work to be carried out.

3 pumps with constant output thus perform functions such as: brakes, stabilisers in the centre pivot, differential lock, front axle suspension, tipping function and emergency steering function. The fourth pump with variable output takes care of the pivot steering function.

The separate pumps ensure completely independent control of the steering and tipping function, which means that the vehicle can be positioned at the same time as tipping is carried out. The vehicle can thus be driven away at full speed at the same time as the body is lowered.

On other models the steering is often restricted when the tipping function is used – this is not the case for Hydrema 922C. The variable pump for the steering supplies a very large quantity of oil even at low engine revs, which ensures that the steering

Brakes

Effective and reliable brakes are an absolute necessity on a dumptruck. On 922C the brake system consists of two circuits with oil-immersed disc brakes on all wheels. The sealed brakes are cooled effectively by the oil. The handbrake is a spring-activated Fail-Safe brake with oil-immersed discs. The brake can be conveniently activated by a push button before tipping operations are carried out. The vehicle has a standard bogie-brake, which only works on the bogie via a separate brake pedal. This brake ensures a very stable vehicle at downhill driving.

The advantages are obvious: Maximum braking power in all conditions, good brake cooling and no maintenance.

never feels sluggish. The variable Load Sensing pump saves fuel since it only provides the hydraulic power needed at any particular moment.

The advantages are obvious: Shorter cycle times when dumping, low fuel consumption and maximum operator comfort.



TECHNICAL DATA:

Chassis:

Articulated chassis with pendulum bar and double hydraulic stabilisers in the centre pivot. The two stabilisers provide a high degree of stability both when driving and when carrying out dumping operations. The chassis is fabricated in high tensile steel in order to obtain the highest possible strength and the lowest possible unladen weight.

Axles:

Front: Rigid axle with electronically controlled suspension and level control. Individual level control on each side enables the vehicle to remain level when driving fast round corners. The front axle has a differential lock with 75% locking action. Rear: Heavy-duty bogie axle with reduction gear at the differential and slow-moving gear in the bogie boxes. Simple and maintenance-free design. The bogie axle has a differential lock with 55% locking action.

Engine:

Cummins QSB 24 VALVE, 6.7 litre 6 cyl. Tier 3 engine, with turbo and intercooler. 194 kW/264 hp at 2200 revs./min. (Power bulge: 201 kW/274 hp at 2000 revs./min.) Max. torque 990 Nm (730 lb.ft.) at 1300-1500 revs./min. The engine is equipped with 24 valves and a fully electronically controlled common rail injection. The engine fan runs at variable revs according to cooling requirements. Latest engine technology which meets US Tier 3 requirements for exhaust emission.

Transmission:

ZF ERGOPOWER 6 WG 210 automatic transmission with 6 forward gears and 3 reverse gears. The transmission is equipped with 100% "lock-up" in all gears, which electronically locks the connection between the engine and the transmission, and gives direct drive which bypasses the converter. A centre differential is located in the transmission's output shaft in order to equalise the speed differential between the front and rear axle. The centre differential has 100% differential lock. Electronic control of the transmission's shifting mechanism via a joystick (ZF Ergo 2), fully automatic or manual gearshift. Smooth gearshift which prevents wheel spin in difficult conditions. Max. speed: Forward: 31 mph / Reverse: 19 mph. Max. tractive effort: 212 kN.

Steering:

The new servo activated hydrostatic steering results in great comfort, since impacts from the terrain are not transferred through to the steering wheel. Separate variable pump for steering function.

Brakes:

Full dual-circuit brake system with oil-immersed disc brakes on all 6 wheels. Fail-Safe handbrake on the front axle. Maintenance-free brakes. The brakes can be activated by a push button before dumping operations are commenced. Separate brake pedal which only works on the bogie as a bogie brake.

Hydraulic system:

The hydraulic system consists of 4 hydraulic pumps:

Pump 1: 6.9 gal/min constant flow pump for brake, stabiliser, differential lock and suspension.

Pump 2: 39.6 gal/min variable flow pump for pivot steering.

Pump 3: 44.9 gal/min constant flow pump for tipping function.

Pump 4: 16.9 gal/min constant flow pump for emergency steering.

Electrical system: Standard 24V el. system with 70 Amp. alternator.

Tyres: Standard: Twin 650/55x30.5 /gr. press, load.: 15.5 psi.

Twin 600/60x30.5 /gr. press, load.: 17.0 psi.

Options: Twin 850/45x30.5 /gr. press, load.: 11.3 psi.

Twin 800/45x30.5 /gr. press, load.: 11.9 psi.

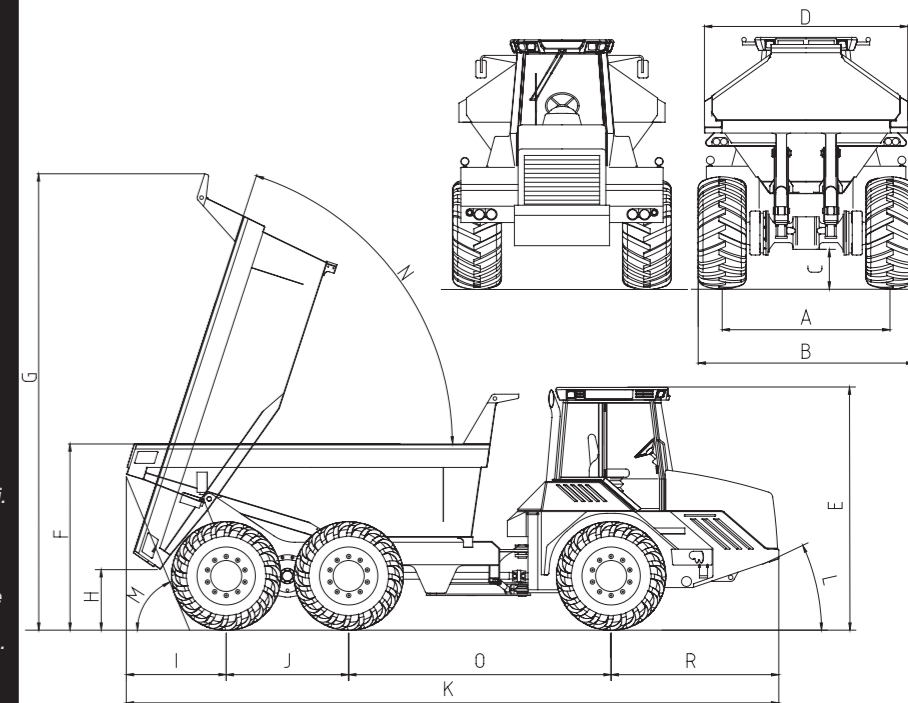
Goodyear EM 20.5R25 /gr. press, load.: 19.1 psi.

Dumptruck body: Robot-welded body in high tensile Hardox steel without side ribs. The double-action tipping cylinders are located under the body for maximum protection. As an option, the dumptruck body can be supplied with heat and an automatic Tail Gate. Tipping times: 7.5 sec. up / 5.5 sec. down. Tipping angle: 72°.

DIMENSIONS:

Total weight*	75,620 lb
Unladen weight*	31,526 lb
Load capacity	44,092 lb
Axle weights, front (unladen)	15,432 lb
Axle weights, centre (bogie)	8,046 lb
Axle weights, rear (bogie)	8,046 lb
Axle weights, front (loaded)	22,265 lb
Axle weights, front (bogie)	26,675 lb
Axle weights, front (bogie)	26,675 lb
B Total width:	TWIN 650/55x30.5 9'7" ft. in.
	TWIN 850/45x30.5 10'10" ft. in.
	EM 20.5R25 9' ft. in.
C Ground clearance	1'8" ft. in.
D Width, body	9' ft. in.
E Max. height	10'11" ft. in.
Transport height	10'9" ft. in.
F Loading height	8'6" ft. in.
G Height raised body	20'8" ft. in.
H Tipping clearance	2'8" ft. in.
I Overhang, rear	4'8" ft. in.
J Wheel base, bogie	5'5" ft. in.
K Length	29'6" ft. in.
L Approach angle, front	25 °
M Approach angle, rear	67 °
N Tipping angle	72 °
O Wheel base	11'11" ft. in.
R Overhang, front	7'7" ft. in.
Body capacity, struck	11.6 yd ³
Body capacity, heaped	15.7 yd ³
Tipping time, raise	7.5 sec.
Tipping time, lower	5.5 sec.
Turning radius, outer* (tyres 650/55-30.5)	24'12" ft. in.
Fuel tank	79 gal
Hydraulic tank	53 gal

* with tyres 650/55-30.5





Developed for YOUR benefit...

- ◆ **Unsurpassed cross-country performance**
- ◆ **Low unladen weight and low ground pressure**
- ◆ **Bogie axle for maximum passability**
- ◆ **Front axle suspension with electronic level control for maximum comfort**
- ◆ **Permanent 6-wheel drive**
- ◆ **Tier 3 engine with low fuel consumption and the best performance/weight ratio on the market**
- ◆ **Fully automatic Soft-Shift transmission with gear selection via joystick**
- ◆ **Centre pivot with weight transfer for increased stability**
- ◆ **22 T capacity**
- ◆ **Oil-immersed disc brakes**
- ◆ **Climate control system and air suspended seat as standard**

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STANDARD EQUIPMENT:

Safety...

- ◆ Large heated side-view mirrors with swivel joint
- ◆ Rear lights integrated in dump body
- ◆ 8+2 working lights
- ◆ Non-slip steps for cab access and egress
- ◆ Acoustic reversing alarm
- ◆ Maintenance-free service and parking brake
- ◆ Bogie brake

Cab/comfort....

- ◆ Air Condition
- ◆ Air-suspended seat
- ◆ Front axle with suspension and automatic level control
- ◆ Multifunction joystick in right armrest
- ◆ Air filter and exhaust system located under hood
- ◆ 4 halogen front lights
- ◆ 8 working lights
- ◆ Computer-controlled instrument panel
- ◆ Two doors with easy access

Chassis...

- ◆ 12° oscillation in centre pivot
- ◆ Articulated with two hydraulic stabilisers in the pivot
- ◆ Weight transfer
- ◆ Hydraulic lines hidden/protected in centre pivot just above cardan shaft



OPTIONAL EQUIPMENT:

- ◆ Heating of the dumptruck body using exhaust gas
- ◆ Tail gate
- ◆ Tyres: Goodyear EM and Trelleborg Twin
- ◆ Rear view system
- ◆ Front/rear lights protection
- ◆ Central lubrication



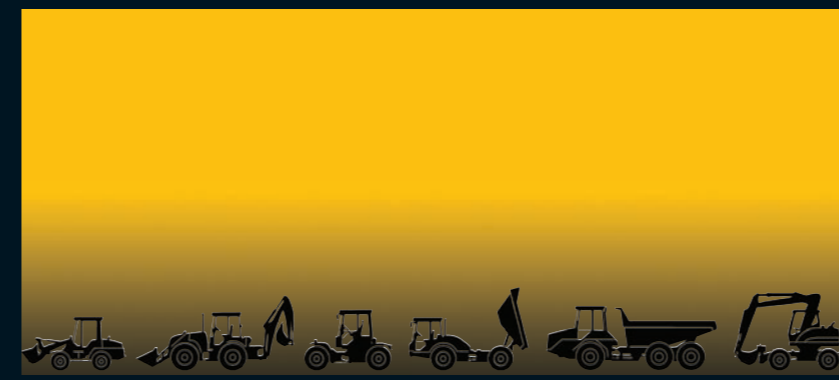
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