



Ref fc1047

Self-propelled hydraulic transporter

Year: 2010

TECHNIAL SPECIFICATION

1. Self-propelled Hydraulic Transporter

2. Technical Specification

2.1 The Transporter has the function of automatic adjustment of horizontal platform while the Platform is moving up and down.

2.2 The Transporter has multi-modes wheel steering such as straight, diagonal, transverse, 8-type, end-sway, head-sway and circular.

2.3 Steering is controlled by micro-processor, requires shockproof, anti-magnetization, damp proof, keeps the stability under -20° to $+55^{\circ}$.

2.4 The Transporter is equipped with front lamp, fender lamp, alarming lamp and working lamp.

2.5 The Platform is made of anti-slip steel plate

2.6 For the purpose of repair on the spot and convenient maintenance service, multi-check and test points of problems are established.

2.7 The transporter is equipped with one main driving cabin and sub-driving cabin, both of them has the function of locking the transporter. For the coupled use, one end is for driving cabin, another end is for wire control.

2.8 Double tubes protective function for the suspension cylinder if the tube broken

2.9 Coupling Transporters

2.9.1 For coupling use, Two or more units of the transporter can be connected electronically either by means of side by side or end to end.

2.9.2 The driver can operate the coupling transporters by any of the driving cabins.

2.9.3 While coupling operation, the loading capacity can reach the rated loading capacity of transporters, with the maximum distance of 50 meters between the coupling transporters.

2.9.4 Multi-steering modes such as straight drive, transverse drive, diagonal drive, circular drive should be achieved with good synchronizing performance.

3. General Introduction of Main Systems

3.1 Steering Systems

- Independent Steering and Micro-Processor Control make the machine realize multi-modes of steering, such as forward, backward, straight, transverse, diagonal, and circular steering, which are controlled by a handle controller in the cabins.
- When steering, the bearing axis of all steering system are crossed at a common point, ensuring the steady steering of the machine.
- When moving diagonally, the steering angle is $\pm 100^{\circ}$ with flexible, easy, continuous and steady operation.
- The inner turning radius is 0 degree.
- There are adequate quantities of suspension cylinders, which guarantee the safety and stability when the transporter is moving with the maximal load or the largest steel blocks. The platform height can be adjusted with ± 350 mm of lifting stroke and Each suspension cylinder has the function of consolidate control or independent adjust.
- The lifting and lowering of the platform is by a handle controller in the cabins. The hydraulic oil pump equally distribute the hydraulic oil to the suspension oil cylinder via the proportional valves, which guarantee the platform lifting and lowering simultaneously.
- When overload, the safety valve will unload automatically to ensure the lifting oil cylinder not be damaged.
- If special operation needed, the platform can be lifting and lowering simultaneous in a required angle through the operation of the main controller. Besides, 4 manual hydraulic valves are installed to ensure that the platform can be lower to the lowest point when under emergency.
- The hydraulic system can realize the interchange of 3-point bearing and 4-point bearing.



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- When meeting the scraggly road, each suspension cylinder of the working transporter is able to compensate automatically to make each suspension cylinder bear the same load. If not, the alarming system will come into effect and the working transporter will be locked. The alarming signal is seen on the Crystal Display Screen. When meeting the inclined road, the operator can adjust manually the relative height of any side or any corner of the platform, to ensure every suspension cylinder bear the same load.

3.3 Safety System

- There are 14 units of suspension cylinders. In order to secure the safety driving, all systems of suspension cylinders are installed with safety valves with double circuits in case the tube broken.
- When any suspension cylinder overloaded, the alarming function will be effective immediately. If overloaded by 10%, the lifting function of the bearing suspension cylinder shall be automatically off to ensure safety.
- When the steering error of any steering wheelset is over 6 degree, the alarming light in the cabin shall flash and the steering function will be off, while the error over 8 degree, the driving system will automatically shut off and the transporter stops.
- In each side of the bearing platform, there are viewfinder, routine floodlight, steering light, brake light, working light, buzzer as well as fault alarming light.
- Emergency stop buttons are installed in each corner of the platform.
- Platform cover steel plates with 5mm thick are installed.

3.4 Brake System

- Air brake system is installed, the main elements of which are from WABCO Germany. When in displacement, the transporter is able to brake any time through pedal brake when needed. The brake system is reliable, safe, steady and shockless.
- Parking brake controller is installed. When stop running or parking aside for so long a time, manual brake controller should be used to make sure the equipment not slide.

3.5 Driving Cabin/Control System

- There are two cabins in both end of the transporter. Each cabin has the same function and include the following configuration: Industrial computer, Crystal display screen, Electronic control system, Instruments and meters, air heater and air conditioner, etc. And the main function of both cabins interlocks. Each cabin possess great ventilation, brushers and cleaning facilities are installed. The chair can be adjusted forwards, backwards, upwards as well as downwards. Safe windows glasses are installed which provide a broad view for the operators as well.
- Status display is set up in the main cabins, such as the status of 3-point suspension loading or 4-point suspension loading, CG indicator, indicators of critical point of center, loading weight, driving operational error and critical point of overload. What is more, multi-functional alarming system is installed as well, such as low pressure of engine lubrication oil, high temperature of engine lubrication oil, low water level of the cooling water, high temperature of the cooling water, air filter status, high pressure oil filter status, low hydraulic oil level, high hydraulic oil temperature, overload, CG over critical area, and so on.
- There are 3 kinds of alarming: 1. light alarming-temporary 2. sound & light alarming-for emergency use 3. sound & light alarming-lock
- By using the handle control and buttons in the cabins can realize all the function of the transporter.
- Couple use of transporter

Reserve input jack for coupling use as per user's requirement.

3.6 Other Requirements

- Equipped with light lamp and inspection lamp for driving at night
- Micro-Processor Control System requires shockproof, anti-magnetization, damp proof and anti-hot, dependable and convenient operation.



3.7 On -the -Spot repair & Maintenance

- Fully taken the Repair on the spot and convenient maintenance service into consideration, the multi- Check and Test Points of problems are established.
- Standard and Universal Components: The bolt and nut for the transporter is selected over 8.8 Grade and galvanized, the gasket and spring is galvanized and passive.
- The steel of steel structure for transporter's frame should have Certificate of Inspection and Certificate of Quality. Weld bond should be strictly conforming to the standard and its surface should be sprayed anti-rust Sa 2.5 Grade.

3.8 Working condition of the transporter

- Working in open air. The transporter acts perfectly no matter sunny, rainy, windy as well as snowy.
- Climate Condition: Ambient Temperature: -20~55
- Relative Humidity: 45~100%

3.9 Paint Scheme:

- Standard and Universal Components: The bolt and nut for the transporter is selected over 8.8 Grade and galvanized, the gasket and spring is galvanized and passive.
- The steel structure for transporter's frame should have Certificate of Inspection and Certificate of Quality. Weld bond should be strictly conforming to the standard and its surface should be sprayed with anti-rust Sa 2.5 Grade.
- All fabricated parts or hot worked areas must be either grit blasted or by power tooling method to SA2.5
- First coat of zinc rich epoxy prime up to 40um.
- Second coat of epoxy mastic MIO paint up to 40um.
- Third coat of finishing paint of international yellow up to 40um.



4. Main Technical Parameter

No.	Items	Parameter
1	Payload	380, 000kg
2	Dead Weight	68, 000kg
3	Total Weight	448,000kg
4	Axis/ Suspension	7/14
5	Load per Wheel Bogie	32,000kg
6	Number of drive axle / driven pendulum axle	6/8
7	Wheel Tyre Specification/ Quantity	12.00-20/56
8	Wheel Rim Specifications/ Quantity	8.50V-20/56
9	Velocity: Flat Road Without load /Flat Road With Full Load	0-12 km/h 0-5 km/h
10	Climbing Slope Ability with full load	Vertical Slope: at 6% ; Cross Slope at 2%;

11	Wheel steering	Multi-way steerings
12	Fixed cabin type hanging beneath the platform	Yes
13	Platform height without load	1600mm
14	Platform Lifting Distance	0-700mm
15	Steering Radius	R=0
16	Distance away form Ground while Driving	≥150mm
17	Platform Size	L: 18,000mm W: 6,000mm
18	Engine	DEUTZ
19	Control Modes	Micro-processor/PLC/ electronic safety sensors & devices
20	Steering modes	Straight, 8-type, Circular, diagonal, transverse, swing steering

5. Scope of Supply



5.1 Transporter: 1 Unit

5.2 Document attached to Transporter

- 1) Certificate of Quality of Product (6 copies)
- 2) Test Report for Hydraulic Transporter (6 copies)
- 3) Introduction of Operation (6 copies)

Including:

- A. General Drawing
- B. The Drawing of Display Panel (Driving Cabin)
- C. Schematic Circuit of Drive Hydraulic System
- D. Schematic Circuit of Steering, Suspension Hydraulic System
- F. Schematic Circuit of Electricity
- G. Schematic Circuit of Engine Control
- H. Schematic Circuit of Micro-Processor Control System
- I. Schematic Circuit of Air Brake System
- J. Schematic Circuit of Throttle Control
- K. Product Sample of Hydraulic Cooler
- L. Product Sample of Proportional Valve
- M. Product Sample of Oil Motor
- N. Necessary free hand drawing of Structure (for replacing high-mortality parts)

5.3 List of Commissioning Spare Parts

NO.	Name	Type & Specification	Quantity	Note
1	Liquid Level and Temperature Meter	YWZ-500T	1	
2	Filter Element for Oil Absorption		1 Set	Shanghai Limin Co., ltd
3	O Shape Seal Ring	Φ11×1.9	50 Piece	GB1235-86
4	O Shape Seal Ring	Φ16×2.4	50 Piece	GB1235-86
5	O Shape Seal Ring	Φ35×3.1	50 Piece	GB1235-86
6	Multipiece Gasket	12	10 Piece	JB982-77
7	Multipiece Gasket	16	10 Piece	JB982-77
8	Multipiece Gasket	22	10 Piece	JB982-77
9	Multipiece Gasket	27	10 Piece	JB982-77
10	Multipiece Gasket	34	10 Piece	JB982-77
11	Heavy Pressure Glue Pipe	Drive Glue Pipe	2 Piece	Shanghai ShenXin
12	Heavy Pressure Glue Pipe	Steering Glue Pipe	2 Piece	Shanghai ShenXin
13	Brake Soft Pipe		2 Piece	
14	Seal for Steering Cylinder		1 Set	Parker, imported



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15	Seal for Steering		1 Set	Parker, imported
16	Engineering Tyre		1 Piece	China
17	Wheel Rim		1 Piece	China
18	Shaft Boss		4	
19	Shaft Boss		4	
20	Tool Box with Lock	L800mmxW400mmxH250mm	1	
21	Repair Lamp at Night with 15m cable		1	
22	Axle disassemble tool (3 Piece)		1	
23	Lubricating Screw		1	
24	Tools for Engine		1	

6 List of Main Outsourcing Parts & Fittings

No.	Name	Maker
1	Engine	DEUTZ
2	Torsional Damper	KTR(GERMANY)
3	Drive Variable-Pump	Sauer Danfoss(Germany.)
4	Steering , adjusting level Variable-Pump	Sauer Danfoss Group (Germany.)
5	Drive motor	Bosch Rexroth Group (Germany.)
6	Wheel decelerator	Bosch Rextoth Group (Germany.)
7	Valve block	HAWE INTERNATIONAL TRADING CO. LTD (Germany)



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8	Radiator	AKG CO. LTD (Germany.)
9	Suspension Cylinder	Made in China with imported Parker seals
10	Steering Cylinder	Made in China with imported Parker seals
11	Micro-Electronics Control System	EPEC (Finland)
12	Sensor	Germany
13	Rotary Bearing	Rothe Erde Slewing Bearing Co.Ltd (Germany & China , Joint Venture)
14	Air-Conditioning	Sandn (Japan), assembled in China

7. Test and Acceptance

7.1 The design, manufacture, test and acceptance is carried out according to

1) Technical Agreement,

2) <<The Universal Technical Conditions Series Hydraulic Transporter>> (Q/ZDF018-2001)

3) << The Standards of Test and Acceptance for Series Hydraulic Transporter >> (Q/ZDF030-2003)

7.2 Before delivery, the load test is conducted according to the maximum payload.

Part A shall send the technicians to worksite for test and acceptance.

8. Training

The seller shall be responsible for training for OPERATORS AND MAINTENANCE CREWS FROM BUYER FOR TWO WEEKS AT THE BUYER'S WORKSITE on operation, inspection, repair, and maintenance at maker's factory. All training Fee is on seller's account. And after the transporter arrives at the buyer's worksite, the maker's engineers should be at buyer's worksite for 7 days commissioning and trouble shooting. All the charges will be on seller's account.

9. Warranty and Service after Sales

9.1 The warranty period is 12 months after Factory Issue.

9.2 After the transporter arrived at the buyer's worksite, the seller shall send 1-2 technicians to the buyer's worksite for guiding the installation, commissioning, and furthermore conduct training on operation, repair, and maintenance for the buyer's technicians .

9.3 After the written notice is received, The seller shall send the technicians to the site of the buyer for service after sales within 3 days after Visa is permitted

9.3 The seller shall be responsible for the repair service and burden any expense provided that there is any defect in the designing, and manufacturing of transporter which resulted in the breakdown or quality problem.

9.4 The seller shall be responsible for assisting repair and maintenance service if there is break down for the transporter resulted from improper use by the buyer or Force Majeure, but the buyer Shall be responsible for any expense.

10. This agreement is taken effect upon signature with stamps by both Parties. Any unmentioned items in this agreement should be solved through friendly way.

11. This agreement is equally authentic, attached to the << Contract >>, and is executed strictly together with Contract.

12 The prescription and effectiveness are same as the << Contract >>.This original agreement written in English and Chinese has four copies respectively, each Party holds two copies.



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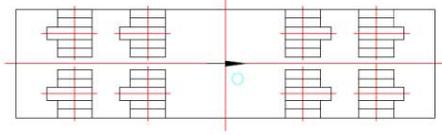


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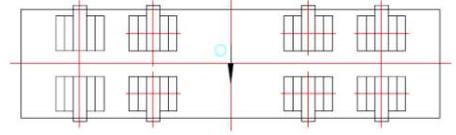
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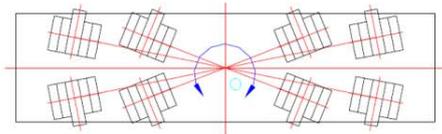




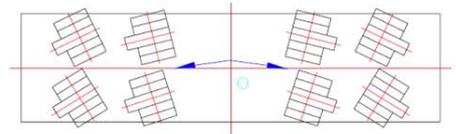
straight driving



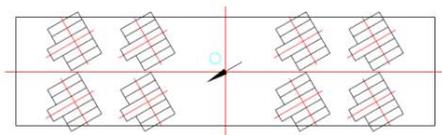
diagonal 90°



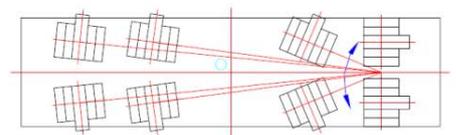
circular driving



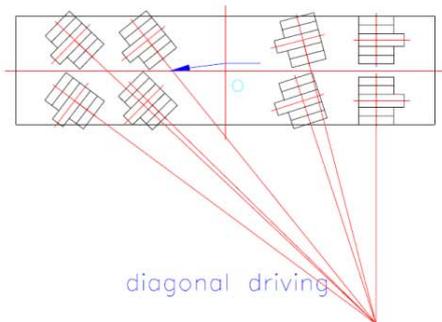
normal driving



diagonal driving

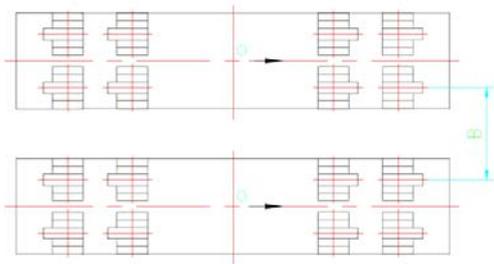


end/head swing

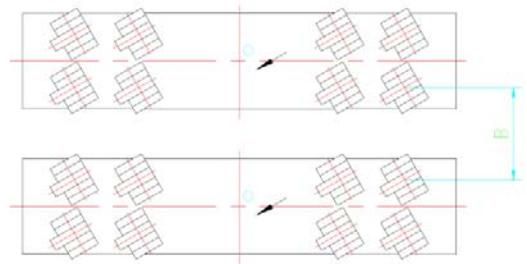


diagonal driving

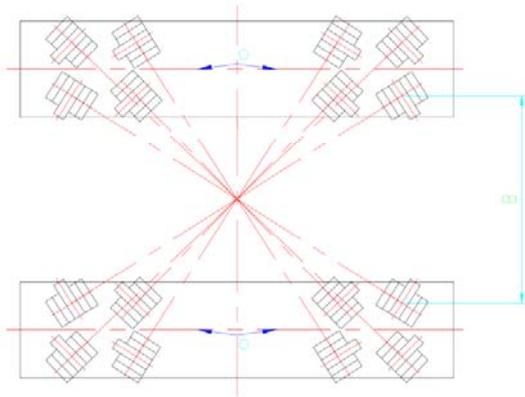
Steering modes of a single transporter



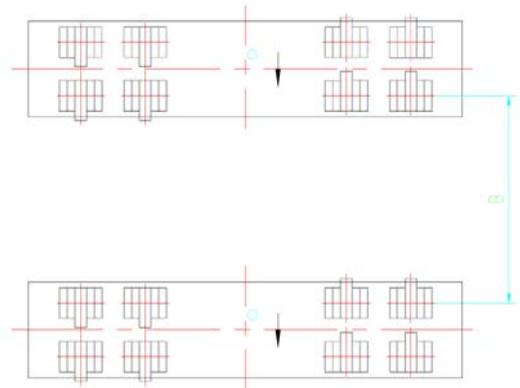
straight driving



diagonal driving

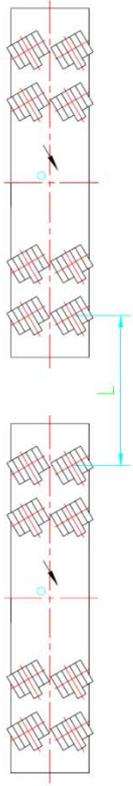


circular driving

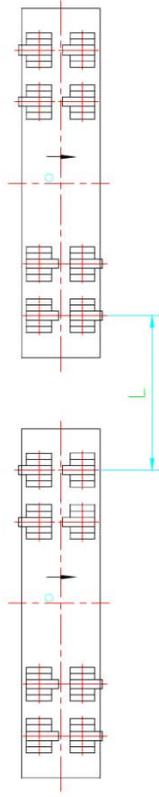


diagonal 90°

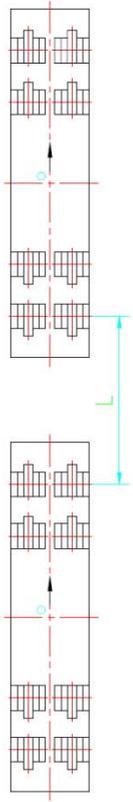
Steering modes of side by side coupling transporters



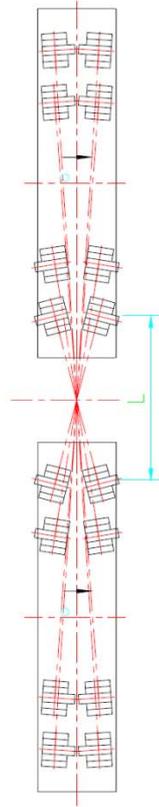
diagonal driving



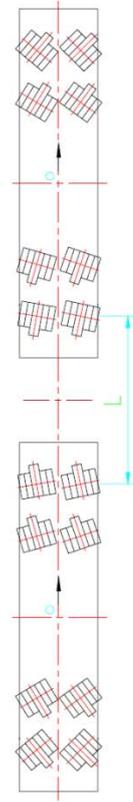
diagonal 90°



straight driving



circular driving



normal driving

Steering modes of end to end coupling transporters