

TANKERS

OPERATING & SAFETY INSTRUCTIONS

FOR SPARE PARTS GO TO
WWW.MARSHALL-TRAILERS.CO.UK

FOR MODELS:
ST1200, ST1400, ST1600, ST1800,
ST2000, ST2300, ST2550



CHARLES J. MARSHALL (ABERDEEN) LTD
CHAPEL WORKS, BUCKSBURN, ABERDEEN, AB21 9TL.
Telephone: 01224 722777 Fax: 01224 724034
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EC DECLARATION OF CONFORMITY

WE: CHARLES J. MARSHALL (ABERDEEN) LTD

CHAPEL WORKS, BUCKSBURN, ABERDEEN, SCOTLAND, AB21 9TL.

DECLARE THAT THE PRODUCT:

MAKE: CHARLES J. MARSHALL (ABERDEEN) LTD

TYPE: MARSHALL TANKER

MODEL: _____

SERIAL NO: _____

**CONFORMS TO THE ESSENTIAL HEALTH & SAFETY REQUIREMENTS OF
89/392/EEC MACHINERY DIRECTIVE AS AMENDED BY 91/368/EEC DIRECTIVE.**

**PLACE OF ISSUE – CHAPEL WORKS, BUCKSBURN,
ABERDEEN, SCOTLAND, AB21 9TL.**

NAME & TITLE OF AUTHORISED PERSON:



**CHARLES R. MARSHALL
MANAGING DIRECTOR**

DATE: _____

**WE ENCLOSE OUR INSTRUCTIONS FOR THE SAFE OPERATION OF THIS
MACHINE, THE WORKING OF WHICH IS FULLY UNDERSTOOD BY THE
UNDERSIGNED.**

CUSTOMER'S SIGNATURE: _____ DATE: _____

SAFETY INSTRUCTIONS

Important Safety advice!

- 1. STOP**
- 2. THINK**
- 3. CALL 01224 722777**

Safety First: Please read and fully understand the contents of this instruction manual, if you are in any doubt whatsoever of the safe operation of this machine, please contact Charles J. Marshall (Aberdeen) Ltd on Tel. 01224 722777.

1. Guards - Ensure all guards are present and securely fastened in place.
2. Maintenance - Ensure the machine PTO and tractor is completely stopped and secure prior to carrying out any maintenance.
3. PTO Shaft - Safety is important, if you are in any doubt of how to fit the PTO shaft, please contact our service department.
4. Ensure that the pump is in the proper position for vacuum or pressure.
5. Ensure that the safety pressure relief valve is set and working correctly by lifting the top round part, the pressure gauge should read no more than one bar – adjustment is required if the pressure is higher than this.
6. Always apply the parking brake when the Tanker is to be left unhitched from the tractor.
7. Hydraulic Valve – Always check that the valve is open when pump is creating pressure or vacuum.
8. Before undoing any hatch, ensure the tanker is depressurised completely.
9. Before entering a slurry tanker, make sure it has been properly ventilated, the pump is running and that the person entering has a rope attached, which should be held by two people. Never close the entry hatch with someone inside.
10. As some gases released by agitated slurry may be flammable, never smoke or hold up naked lights in the vicinity of the tanker.
11. Extreme care is required if discharging slurry near power lines.

OPERATING INSTRUCTIONS

All Pumps fitted to Marshall Tankers, have unfortunately, to be subject to the Manufacturer's warranty terms which are that if a Pump has worked successfully for more than three hours it cannot be regarded as being of faulty manufacture.

YOUR MARSHALL TANKER HAS BEEN DESIGNED TO GIVE YOU LONG AND RELIABLE SERVICE.
THIS CAN BE ENSURED BY FOLLOWING THE INSTRUCTIONS BELOW.

General Operating Instructions

Operating the tanker – Couple up the 6” hose either on the side or at the rear to the bauer coupling ensuring that the connection is airtight. Open the appropriate valve, place the vacuum pump in the vacuum position then start the PTO (at low engine speeds). Operators of tankers fitted with a hydraulic drive pump should ensure both hydraulic hoses are connected to the tractor's spool valves before engaging. Watch the gauge on the front and take note of its reading as the hose becomes full, at this point increasing vacuum is pointless as this is the point when the smallest amount of vacuum is lifting the liquid. By controlling the PTO speed you will be able to maintain this situation. (This greatly reduces the risk of over filling and reduces the amount of froth created during loading). When liquid becomes visible in the sight glass immediately shut the appropriate valve, shut down the engine revs and when the engine is idling shut off the pump. Uncouple the hose and change the pump position to pressure.

When emptying the tanker allow the pressure to build up in the tanker then open the back rear valve – never turn with the PTO running and always start and stop the pump at low engine revs.

Hertell Pump Operating Instructions

Must be used in the 540 RPM PTO mode, the PTO speed must not exceed 350rpm.

There must be one oil drop, every one to two seconds, visible in the oiler. Remember this is **TOTAL** oil loss, so **MUST** be checked and topped up daily to keep the oil above the mark on the dip-stick.

Check the oil level in the front gear box housing regularly.

Due to the weight and speed at which the main pump rotor rotates it is vital that the input PTO speed is low when the pump is started or stopped.

To help prolong the life of the pump it is advisable, after every 25 working hours, to pass diesel through it. This can be done by placing the pump in the pressure position and holding the container of diesel up to the exhaust on the pump the diesel will be sucked up through the pump and will wash out the entire pump. KEEP THE PUMP TURNING for around 30 seconds then change the pump from pressure to vacuum – note the foul diesel will pass out through the exhaust so some means of catching this is advisable to enable you to dispose of this correctly. Continue the pump running for around 30 seconds this greatly prolongs not only the pumps life but coats the top shut off valve.

This procedure **MUST** only be completed when the pump is cold and DO NOT STOP THE PUMP UNTIL the diesel has dispersed fully.

Bationie Pump Operating Instructions

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ALWAYS DISENGAGE PTO SHAFT WHEN TURNING.

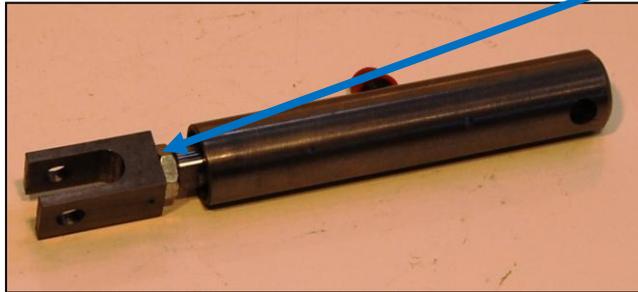
NEVER OVERFILL TANK. TO AVOID THIS, CLOSE THE GATE VALVE WHENEVER SLURRY IS VISIBLE IN THE SIGHT GLASS. THE OVERFLOW VALVE IS THERE ONLY FOR SAFETY.

MAINTENANCE INSTRUCTIONS

1. Hubs / Bearings must be greased regularly; we recommend they are checked after the first fourteen days work, then six monthly thereafter.
2. Tyre pressure should be checked regularly (See page 8).
3. Wheel nuts should be checked when the machine is new, then after operating for one hour, then one day and weekly thereafter. The same procedure applies if nuts have been removed and replaced.
4. Check the tow hitch for wear and replace accordingly.
5. Lights should be kept clean and if not in use for some length of time, coating with some form of oil spray is recommended.
6. Regularly check the top shut-off valve for damage or corrosion.

7. Keep Hydraulic 6" Valve Clean - This can be a cause of over filling problems as a poorly adjusted unclean valve can allow air to pass when the tanker is being loaded causing vast amount of unwanted froth.
8. Regularly check the slurry trap valve on the top of the tanker is moving freely and there are no obstructions stopping its operation.

BRAKE ADJUSTMENT: Always adjust brakes with the tanker on a completely level surface. This can be done by loosening the nut behind the clevis, then rotating the piston, adjustment will appear from the ram. Remember to tighten the locknut when completed.



Maintenance Instructions - Oil

Check the oil levels daily.

1. The front part of the pump is a gearbox which should be filled to the top of the small sight glass, on the side, with SAE 90 (EP90/ISOVG220) oil.
2. The other oil is checked by removing the dip-stick on top of the pump which should always be kept above the mark. This is a **TOTAL DISCHARGE OF OIL SO MUST BE TOPPED UP DAILY** with SAE 20 (Straight20/ISOVG68) or similar (Do not use milking parlour oil).

The oil drip feed has to be set at one drop every two seconds when the pump is idling.

ENSURE THE PUMP IS PROPERLY LUBRICATED

FITTING INSTRUCTIONS TO FIT ACTIVATOR TO GATEVALVE

1. Remove gland nut from the top of the gate valve, leaving the gland packing seals in place.
2. Remove dome part of gate valve from base by unscrewing the six allen bolts.
3. Remove brass paddle and shaft assembly from the base of the gate valve, then remove the paddle from the shaft.

4. De-tension activator spring completely by turning the top threaded rod in an anti-clockwise motion.
5. When the tension is released totally, screw activator tightly into the domed top of the gate valve, then using position 3 (locking nut) lock into position.
6. Replace brass paddle onto the bottom stainless steel shaft of the activator.
7. Replace dome and activator assembly to the base of the gate valve making sure that the gate valve gasket is in place and tighten the allen bolts securely.
8. Re-tension the spring by turning the top threaded rod in a clockwise fashion, until the paddle is seated firmly into the base of the gate valve.
9. Connect activator port to the tractor hydraulic system using 3/8" r1 hose.

GATE VALVE AND ACTIVATOR MAINTENANCE

After frequent use the tension applied to the activator springs may loosen which will cause the gate valve to not close properly. This can be rectified by re-tensioning the springs accordingly. Another problem which may arise with your gate valve/activator assembly is when the gate valve does not fully open. This is caused by the build up of waste material being trapped and compressed in the dome of the gate valve. This can be prevented by removing the activator and top dome unit from the base of the gate valve and cleaning out the dome.

Engineering excellence for 60 years

N.B. Remember to slacken off all the tension from the activator spring when removing the dome/activator unit, and then re-tensioning it when the unit has been bolted back together again after cleaning. This will prolong the life of the activator as well as the gate valve.

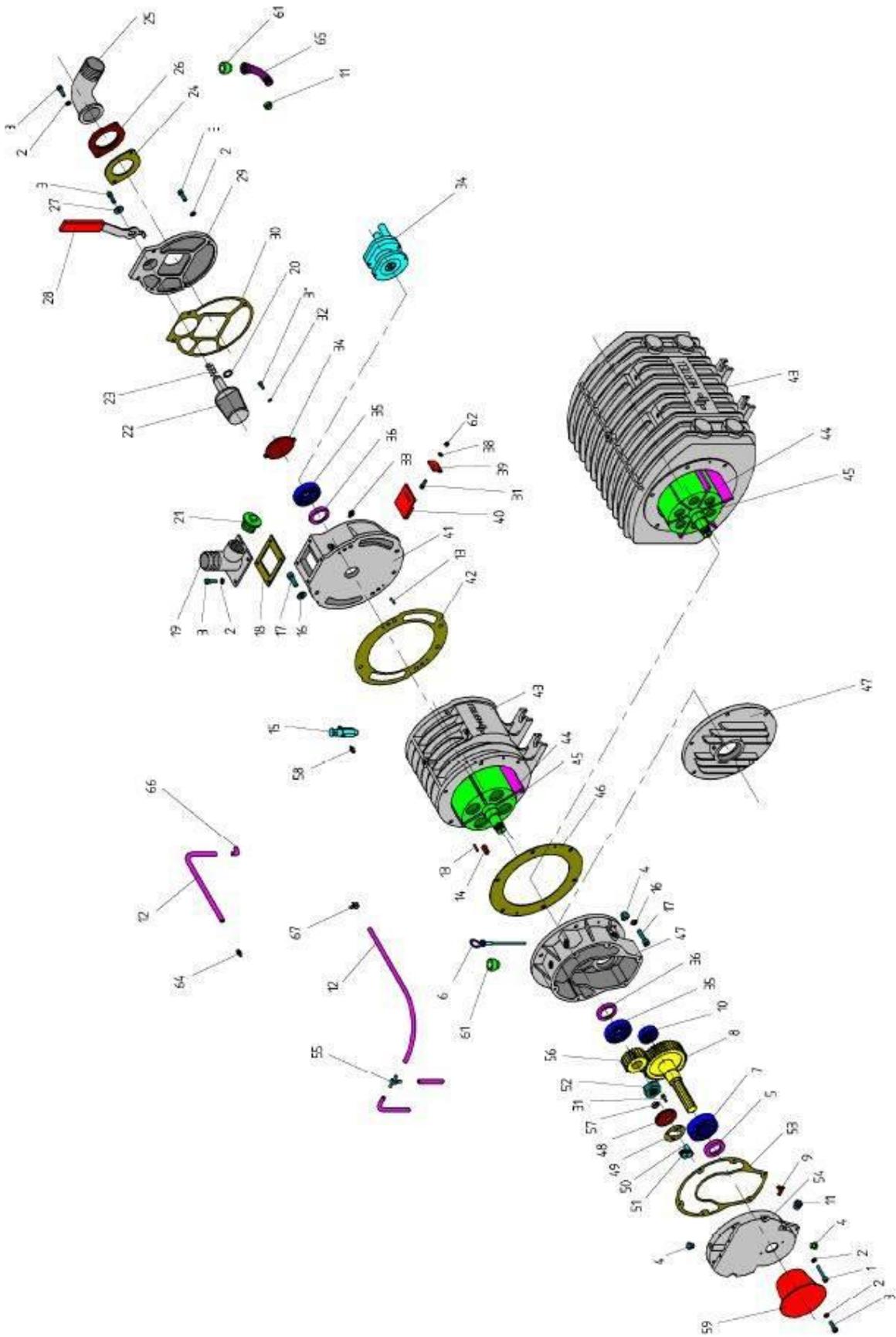
Pressure valve adjustment

To adjust the pressure simply slacken the locking nut on the body of the valve then screw the valve clockwise to increase pressure anticlockwise to decrease (NB maximum pressure should be kept at 1barr / 15PSI).

Any other problems arising, please contact Charles J. Marshall (Aberdeen) Ltd service department.



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	Part Number	
		<u>Complete Pump</u>
Hertell KD8000	069/03-8000	KD-8000ltr Vacuum Pump c/w Fixing Plate
		<u>Parts for Pump</u>
Hertell KD8000	069/04-8001	No.1 Screw
Hertell KD8000	069/04-8002	No.2 Washer
Hertell KD8000	069/04-8003	No.3 Screw
Hertell KD8000	069/04-8004	No.4 Plug
Hertell KD8000	069/04-8005	No.5 Seal
Hertell KD8000	069/04-8006	No.6 Oil Level Indicator
Hertell KD8000	069/04-8007	No.7 Bearing
Hertell KD8000	069/04-8008	No.8 Attack gear 55 teeth
Hertell KD8000	069/04-8009	No.9 Nipple 90
Hertell KD8000	069/04-8010	No.10 Bearing
Hertell KD8000	069/04-8011	No.11 Oil Sight Glass
Hertell KD8000	069/04-8012	No.12 Oil Tube
Hertell KD8000	069/04-8013	No.13 Elastic Pin
Hertell KD8000	069/04-8014	No.14 Key
Hertell KD8000	069/04-8015	No.15 Drop Feeder
Hertell KD8000	069/04-8016	No.16 Washer
Hertell KD8000	069/04-8017	No.17 Screw
Hertell KD8000	069/04-8018	No.18 Gasket
Hertell KD8000	069/04-8019	No.19 Outlet
Hertell KD8000	069/04-8020	No.20 O-Ring
Hertell KD8000	069/04-8021	No.21 Plug
Hertell KD8000	069/04-8022	No.22 Conic Distributor
Hertell KD8000	069/04-8023	No.23 Spring
Hertell KD8000	069/04-8024	No.24 Outlet Gasket
Hertell KD8000	069/04-8025	No.25 Outlet
Hertell KD8000	069/04-8026	No.26 Flange
Hertell KD8000	069/04-8027	No.27 Washer
Hertell KD8000	069/04-8028	No.28 Handle
Hertell KD8000	069/04-8029	No.29 Distributor Cover
Hertell KD8000	069/04-8030	No.30 Gasket
Hertell KD8000	069/04-8031	No.31 Screw
Hertell KD8000	069/04-8032	No.32 Washer
Hertell KD8000	069/04-8033	No.33 Lubrication Nipple
Hertell KD8000	069/04-8034	No.34 Bearing Cover
Hertell KD8000	069/04-8035	No.35 Bearing
Hertell KD8000	069/04-8036	No.36 Seal
Hertell KD8000	069/04-8037	No.37 Plug
Hertell KD8000	069/04-8038	No.38 Copper Washer
Hertell KD8000	069/04-8039	No.39 Hinge
Hertell KD8000	069/04-8040	No.40 Plug
Hertell KD8000	069/04-8041	No.41 Distributor
Hertell KD8000	069/04-8042	No.42 Gasket
Hertell KD8000	069/04-8043	No.43 Body
Hertell KD8000	069/04-8044	No.44 Vane
Hertell KD8000	069/04-8045	No.45 Rotor
Hertell KD8000	069/04-8046	No.46 Gasket
Hertell KD8000	069/04-8047	No.47 Gearbox
Hertell KD8000	069/04-8048	No.48 Oil Pump
Hertell KD8000	069/04-8049	No.49 Oil Pump Gasket
Hertell KD8000	069/04-8050	No.50 Oil Pump Attack Gear
Hertell KD8000	069/04-8051	No.51 Oil Pump Gear
Hertell KD8000	069/04-8052	No.52 Lock Nut
Hertell KD8000	069/04-8053	No.53 Gasket
Hertell KD8000	069/04-8054	No.54 Gearbox Cover
Hertell KD8000	069/04-8055	No.55 T-Connection
Hertell KD8000	069/04-8056	No.56 Small Gear 28 teeth
Hertell KD8000	069/04-8057	No.57 Seal
Hertell KD8000	069/04-8058	No.58 Pipette
Hertell KD8000	069/04-8059	No.59 PTO Guard
Hertell KD8000	069/04-8060	No.60 Rotor Plug
Hertell KD8000	069/04-8061	No.61 1/2" plug
Hertell KD8000	069/04-8062	No.62 Nut
Hertell KD8000	069/04-8063	No.63 PTO Guard Screw
Hertell KD8000	069/04-8064	No.64 Nipple
Hertell KD8000	069/04-8065	No.65 Elbow 1/2
Hertell KD8000	069/04-8066	No.66 Nipple
Hertell KD8000	069/04-8067	No.67 Bracket



Part Number	Size	Maximum Weight	Speed	Max Tyre Pressure
Please note this chart is for reference only each tyre brand can have different ratings.				
083/01-26-12	26 x 1200 x 12	800kg	25kmh	20psi
083/01-100-12	10.0/80x12 10ply	1000kg	30kmh	45psi
083/01-100-15	10.0 x 15.3	1500kg	30kmh	52psi
083/01-115-15	11.5 x 15	2000kg	30kmh	52psi
083/01-125-15	12.5 x 15	2500kg	30kmh	60psi
083/01-135-17	13.5 x 17	2500kg	30kmh	45psi
N/A	15/70 x 18	3200kg	40kmh	75psi
083/01-15-22.5	15 x 22.5 (385/65R 22.5)	4500kg	80kmh	90psi
N/A	405x60R 22.5	4500kg	80kmh	90psi
083/01-1555-17	15-55 x 17	2120kg	40kmh	52psi
083/01-1670-20	16/70 x 20	3000kg	40kmh	49psi
083/01-165-70	16.5 x 70 x 18	3200kg	40kmh	54psi
N/A	18 x 22.5	5800kg	80kmh	90psi
N/A	BN2 340/457-1300 x 18	2600kg	40kmh	60psi
N/A	BN3 1300 x 530 x 533	4500kg	40kmh	53psi
N/A	BN4 22/70-20	4500kg	40kmh	33psi
083/01-340-65	XP27 Radial 340/65R 18	2650kg	90kmh	72psi
083/01-400-60	400-60 x 22.5	4000kg	40kmh	51psi
083/01-550-45	550-45 x 22.5	4375kg	40kmh	41psi
083/01-560-45	560-45 x 22.5	4575kg	45kmh	58psi
083/01-500-60	500-60 x 22.5	5450kg	40kmh	41psi
083/01-550-60	550-60 x 22.5	5300kg	40kmh	44psi
083/01-435-50	435-50 x 19.5 2YR	4500kg	100kmh	100psi
083/01-184-30	18.4 x 30 14 pr	3550kg	40kmh	39psi
083/01-184-34	18.4 x 34 14 pr	3650kg	40kmh	36psi
083/01-231-26	23.1 x 26	3950kg	40kmh	36psi
083/01-281-26	28.1 x 26	6100kg	40kmh	33psi
OOOOOO	30.5 x 32	7100kg	40kmh	39psi
083/01-750-60	750 x 60 x 30.5	8500kg	40kmh	60psi

MARSHALL PRE-DELIVERY INSPECTION CHECK

Customer's Name:	
Address:	Post Code:
Model:	Serial Number:

Check

Completed

Check Tyre Pressure (See chart on page 8)

Tighten Wheel Nuts
(18mm Stud Diameter = 270Nm / 22mm Stud Diameter = 475Nm)

Grease Hubs

Check External Wheel Bearing
(Ensure No Side Movement on Wheels)

Check Pump Oil Levels (Gearbox and lubricating)

Check All Securing Bolts

Check Lights (If applicable)

Check For Damaged Paint and Touch Up If Necessary

Check Brake Rams (Extend and return freely)

Valve Ram (Opens and closes freely)

Rams and Hydraulic Hoses Checked For Leaks

Ensure Relevant Paperwork Is Completed and Handed to the Operator

Signed: _____ **Date:** _____

General Overall Condition Satisfactory

To be returned when completed:

Fax – 01224 724034

Email – admin@marshall-trailers.co.uk

**Post – Charles J Marshall (Aberdeen) Ltd, Chapel Works, Bucksburn,
Aberdeen, AB21 9TL.**