

Kooima Trner™ CT1400

Compost Turner

Owner's Manual



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1. Introduction

Congratulations on the purchase of your compost turner. Our goal is to provide you a machine that will efficiently compost windrows quickly.

For your safety, read and understand this manual before operating your compost turner.

2. Tractor Requirements

- Minimum PTO horsepower: 130 HP
- Maximum PTO horsepower: 300 HP
- 4 sets of hydraulic connections
- Tractor drawbar must have approximately 19"-24" ground height
- 1,000 RPM PTO speed
- Creeper transmission able to travel as slow as 0.10 MPH
 - IVLOC transmission
 - CVT transmission
 - Recommended operating speed with a 240 HP tractor is 0.5 MPH
- 1.75" 20 spline PTO shaft



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3. Safety

3.1. Operational Safety

- Read the Owner's Manual before using the machine
- Keep clothing and body away from all moving parts while machine is moving
- Stay clear of machine while it's operating, debris can be thrown considerable distances from the rotor
- Do not ride on the machine
- Watch out for pinch points from moving parts
- Familiarize yourself with all aspects of machine before operating
- Ensure safety tongue pin is in place before transporting
- Make sure transport wheels are properly pinned in before transporting down the road
- Ensure skirts are rotated inwards and pinned down before transporting.
- Observe and follow all proper state laws while driving down roads
- Make sure tongue pin is removed before operating tongue cylinder
- Make sure rear PTO attached to gearbox is removed before switching to transport mode
- Check that all paddles are bolted down properly and replace bent/broken ones before operating machine. Broken paddles can fly off rotor at high speeds and cause serious injury
- Wear proper hand, eye, and ear protection while operating and working on machine
- Make sure all guards are in place before using machine



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3.2. Maintenance Safety

- Before working on machine, make sure the machine is lowered to the ground, the tractor is shut off, and all moving parts have stopped.
- Relieve all hydraulic pressure before working on hydraulic system, contents under HIGH PRESSURE
- Make sure all tires are torqued properly and are filled to the appropriate air pressure
- Regularly check all hydraulics and lines for leaks



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4. Operation

4.1. Changing from operational to transport mode

1. Make sure PTO, drive wheel, and drum have come to a complete stop before switching modes. Also make sure there is plenty of room around the composter so as not to hit anything.
2. Raise the machine using the free wheel hydraulics off the ground just high enough to slide the transport wheels on.
3. Fold both skirts inward and lock in place with pins.
4. Remove the PTO connecting the gearbox to the tongue,
5. Remove transport tires from tongue and slide into spindle sockets on frame, lock in place with pins.
6. Make sure drive wheel is all the way off of the ground and the transport wheels are slightly off the ground.
7. Using the hydraulic tongue cylinder, begin swinging the machine so the frame is rotating parallel with the tongue. If the cylinder seems bound it, try driving the tractor forward slowly until cylinder moves again. (There are flow controls on the tongue cylinder if it's moving too fast/slow)
8. About $\frac{3}{4}$ rotated, lower the machine onto the transport tires, lifting the free wheels completely off of the ground.
9. Finish rotating machine, once it's close, insert the tongue pin into locking boss and "finesse" the tongue cylinder until the pin slides all of the way down.
10. Ensure there is appropriate ground clearance to the frame, free wheels and drive wheel are lifted up all the way, transport tires are aired up, etc. before traveling down the road



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4.2. Changing from transport to operational mode

1. Make sure tractor has come to a complete stop before changing modes. Also make sure there is plenty of room around the composter so as not to hit anything. Remove the tongue pin and place in the cab or toolbox of the tractor.
2. Slowly raise the machine with free wheels until the back left transport wheel is lifted off the ground. Then use the drive wheel to raise the machine until the back right transport wheel is lifted off the ground.
3. Using a combination of the tongue hydraulic cylinder and the drive motor, slowly begin rotating the frame from traveling to operational mode. It will take some adjusting to get the drive wheel and tongue cylinder to match in speed.
4. At about $\frac{3}{4}$ rotated, stop the drive wheel and lift up further on the free wheels until both transport wheels and the drive wheel are off the ground.
5. Finish rotating the frame until it is completely perpendicular to the tractor. There should be approximately 2" left of stroke on the tongue cylinder left.
6. With the composter still in the air, take both transport tires off and return them back to the tongue.
7. Fold both skirts back outwards and secure them with pins.
8. Hook up the PTO connecting the gearbox to the tongue.
9. Make sure all paddles are securely fastened to the drum (paddle bolt torque specs = 160 ft*lbs)



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5. Maintenance

5.1. Daily Maintenance

- Grease each point:
 - Tongue bearings (2x)
 - PTO centers (4x)
 - Drum bearings (2x)
 - Drive wheel bearing (1x)
 - Tongue pivot pin (2x)
 - Skirt pivot pin (2x)
- Lubricate drive chain every day of use
- Inspect drum paddles every day of use. Re-tighten down any loose paddles (160 ft*lbs). Replace any bent, missing, or overly worn paddles (paddle is considered worn if overall height is shorter than 5.75”).
- Inspect all hydraulic units to ensure nothing is broken or leaking.
- Remove all material wrapped around drum before starting.



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5.2. Every 2 Weeks Maintenance

- Re-torque lug nuts on all tires after the first 25-50 miles of use, then once every two weeks afterwards. (240 ft*lbs on support and travel wheels, 400ft*lbs on Ag tire)
- Check tire pressure. (60 PSI on support wheels, 80 PSI on transport wheel, and 40 PSI on Big drive Ag tire.)
- Check/reset the tension in the drive chain.
- Grease the leveling jack
- If using shear bolt clutch, check/re-tighten bolt

5.3. Yearly Maintenance

- Re-grease all chain couplers
- Re-pack wheel bearings with grease
- Change oil in gearbox and drive box, use Synthetic ISO Grade 220/AGMA grade 5EP or similar



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6. Service Parts

6.1. Hydraulic parts

<u>Part No.</u>	<u>Description</u>
C00187	BMSY-400 Hydraulic Motor
C00190	Tongue hydraulic cylinder
C00189	Mast hydraulic cylinder
C00185	FN ½ flow control



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6.2. Hydraulic hose lengths

All hydraulic hose used on machine is ½” hose with -8 JIC straight female connector ends unless noted otherwise. System is rated for 3000PSI max.

Hydraulic	Location	Code	Hose Length (inches)
Drive wheel mast	Rod end	1	506"
	Cap end	2	479"
Drive motor	Rod end	3	514"
	Cap end	4	514"
Tractor to Tongue	Rod end	5	258"
	Cap end	6	216"
Main mast Left	Cap to flow d	7	174.5"
	rod to T	8	209.5"
Main Mast Right	Cap to flow d	9	174.5"
	rod to T	10	209.5"
Flow Divider	Flow d to tractor	11	397.5"
	T to tractor	12	397.5"
Check Valve	Left	13	17" (45° FITTING ONE END)
	Right	14	17" (45° FITTING ONE END)



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6.3. Drivetrain

<u>Part No.</u>	<u>Description</u>
C00010	Bearing, ø1.75" 4 bolt flange
C00295	Tongue shaft, ø1.75"
C00188	Main gearbox, 6013
C00259	100 Chain coupler sprocket, 20 tooth
C00153	Connecting shaft, gearbox to drum
C00279	3" squeeze hub for chain coupler
C00254	100 coupler chain
C00256	2-5/8" squeeze hub for gearbox
C00156	Chain coupler cover
C00209	Ø3" Type E heavy duty drum bearing
C00030	Standard 4.5" paddle
C00289	Long 4.5" paddle
C00243	PTO

6.4. Masts

<u>Part No.</u>	<u>Description</u>
C00225	Spindle Kit
C00227	Support wheel
C00200	Drive wheel tire
C00201	New Holland drive box
C50016	Shaft assemb., drive mast
C00206	Bearing, 2 bolt flange ø1.375"
C00205	Ø1.375" Tapered squeeze hub for 204
C00204	Ø11" 60H Gearbox sprocket
C00202	60H Idler sprocket, 5/8" ID
C00203	60H Drive sprocket
C00226	Travel tires
C50021	Travel tire handle



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6.5. Miscellaneous

<u>Part No.</u>	<u>Description</u>
C00239	Ø3/4" x 4" T handle pin
C00311	Mud flap
C50020	Leveling jack
C00210	Bolt on panel
C00103	Bolt on side panel
C00308	Bolt on support panel
C00001	Drawbar ring
C00241	Ø2" x 8" Hitch pin
C00193	Bolt on clamp plate, hose routing

7. Limited Warranty

Kooima Company warrants that the CT1400 shall be free of manufacturing defects for up to one year to the original purchaser. This warranty does not cover any unit that has been abused, not in its proper use, or had any unauthorized repairs done.

In the event of a warranty claim, the following actions will be made, at Kooima Company's option: 1) Repair, 2) replacement. To make a proper claim please contact:

Nolan Den Boer (712-476-6204)

Kooima Company (712-476-5600)



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