



M4065Q

ITEM No. 4065

SERIAL No. _____

Installation, Operation, and Maintenance Manual

Trencher: Digs trenches in earth up to 7ft deep.

To the Owner:

Thank you for purchasing a NorthStar trencher. Your machine is designed for long life, dependability, and the top performance you demand! Take time now to read through this manual so you better understand the machine's operation, maintenance and safety precautions. Everyone who operates this machine must read and understand this manual. The time you take now will prolong your machine's life and prepare you for its safe operation. Enjoy the exceptional performance of your NorthStar trencher, the industry leader! The manufacturer reserves the right to make improvements in design and/or changes in specifications at any time without incurring any obligation to install them on units previously sold.

WARNING! Call utilities before you dig. Do not straddle trench with trencher. Move trencher backward and away from the trench as you dig.

Quick Facts

Engine Oil	Engine is shipped without oil. Fill before starting. Use SAE 10W-30 motor oil.	
Hydraulic Oil	The hydraulic tank needs to be filled with oil before starting engine. Use 10Wt AW32 (Anti Wear) fluid. Item #4040.	
Storage	Add fuel stabilizer to the fuel tank before long term storage.	
Maintenance Schedule	Engine:	Oil: change after first 5 hours, then annually or every 25 runtime hours. Spark Plug: inspect every 100 runtime hours. Air Filter: replace annually or every 100 runtime hours.

Read and understand all manuals before operating.

Any Questions, Comments, Problems, or Parts Orders
Call NorthStar Product Support 1-800-270-0810

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Important - Rules for Safe Operation

Training

- 1.) Read the Owner's Manual completely before attempting to use this trencher.
- 2.) Do not allow anyone to operate your trencher who has not read the Operator's Manual or has not been instructed on the safe operation of the trencher.
- 3.) Never allow children or untrained adults to operate this machine.
- 4.) Never allow anyone to ride on the trencher while towing.
- 5.) Never transport cargo on the trencher.
- 6.) High fluid pressures are developed in hydraulic trenchers. Pressurized fluid escaping through a pin hole opening can puncture skin and cause severe blood poisoning. Therefore, the following instructions should be followed at all times.
 - (a) Do not operate the unit with frayed, kinked, cracked or damaged hoses, fittings, or tubing.
 - (b) Stop the engine and relieve hydraulic system pressure before leaving the trencher unattended or servicing fittings, hoses, tubing, or other system components.
 - (c) Do not adjust the pressure settings of the pump or control valve.
 - (d) Do not check for leaks with your hand. Leaks can be located by passing cardboard or wood over the suspected area. Look for discoloration. If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
- 7.) Keep the operator zone and adjacent area clear for safe trenching. Use extreme caution when operating near structures, utility lines, or when other workers are present. Call utilities before you dig. Do not straddle trench with trencher. Move trencher backward and away from the trench as you dig.
- 8.) If your trencher is intended for use near any unimproved forest, brush, or grass covered land, the engine exhaust should be equipped with a spark arrestor. Make sure you comply with applicable local, state, and federal codes. Take appropriate fire-fighting equipment with you.
- 9.) Trenchers should be only used for trenching. Do not use for other purposes.
- 10.) Never alter the trencher or any part of its manufactured design.

Preparation

- 1.) Contact municipalities and utilities to locate buried lines before digging. Do not dig until you have fully investigated the area. Use extreme caution when overhead or buried utility lines are present.
- 2.) Be thoroughly familiar with all controls and with the proper use of the equipment.
 - (a) Always wear safety shoes or heavy boots.
 - (b) Always wear safety glasses or goggles and approved safety headgear when operating the machine.
 - (c) Never wear jewelry or loose fitting clothing that might become entangled in moving or rotating parts of the machine.
 - (d) Always wear protective hearing devices when operating the trencher. Continued exposure to loud machinery can cause hearing loss.
- 3.) Make sure the trencher is on a level surface with no more than 10° incline. Block the machine as required to prevent unintended movement. Do not operate near soft-shouldered inclines that may not provide adequate support.
- 4.) Always operate the trencher from the operator seat with hands positioned near valve controls and feet flat on the area provided..
- 5.) Handle fuel with care; it is highly flammable.
 - (a) Use an approved fuel container.
 - (b) Never add fuel to a running or hot engine.
 - (c) Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - (d) Replace gasoline cap securely and clean up spilled fuel.
- 6.) Only use the trencher in daylight or adequate artificial light.

SAVE THESE INSTRUCTIONS

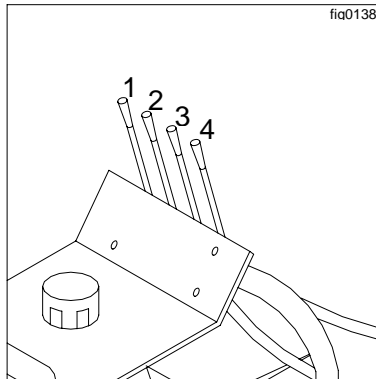
Unpacking

Closely inspect all contents in the shipping carton.

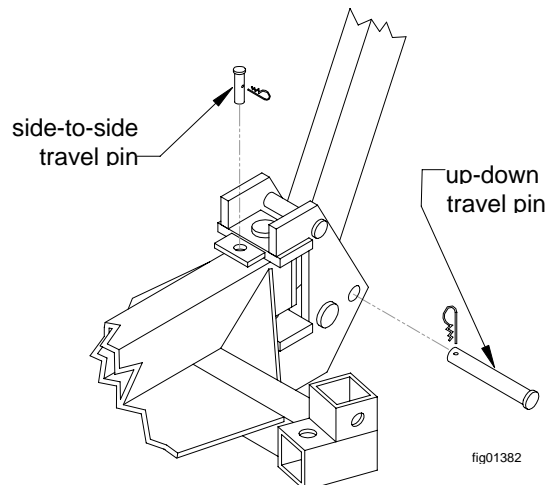
- If you have damaged components then: Contact the freight company that delivered the unit and file a claim.
- If you have missing components then: Contact Product Support at 1-800-270-0810.

Due to the weight of the trencher, two people are needed to unpack. The following procedure prepares the trencher for towing.

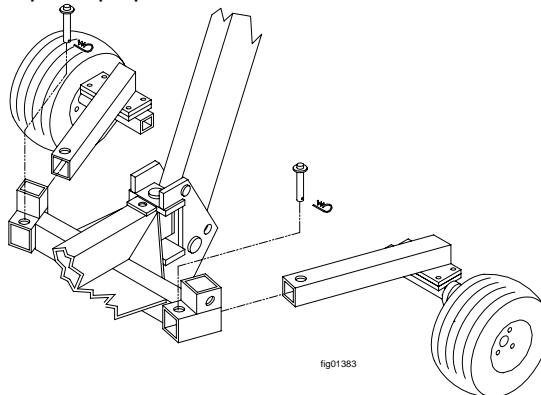
- 1.) After removing the packaging material that secures the trencher to the shipping pallet, add gas and oil to the engine. Fill engine crankcase with 10W-30 motor oil and fill gas tank fresh gasoline. Start the engine and set at half-throttle.
- 2.) Lift the boom up by pulling lever #3.



- 3.) There are two travel pins in the base of the boom that will snap with any movement other than straight up. Remove the up-down and side-to-side travel pins from the base of the boom assembly. Keep these two pins to re-insert for towing.



- 4.) Lower the boom to the ground by pushing lever #3 and continue to lower the boom until it raises the boom end of the trencher off the ground 4-5 inches.
- 5.) Insert the wheels in the front (boom end) of the frame. This is the proper position of the wheels for towing. Secure the wheels to the frame with the pins and pin clips provided.



Unpacking

- 6.) Raise the boom to the full upright position by pulling lever #3. The trencher will now have its weight on wheels and tow bar. Turn the engine off.
- 7.) Install the up-down and sided-to-side travel pins that were removed earlier. Relieve system pressure by pushing lever #3. This will make the boom drop until it rests on the up-down travel pin.
- 8.) Insert outriggers in the vertical brackets above the newly installed wheels. Lock the outriggers in the vertical position with the pins and pin clips provided.

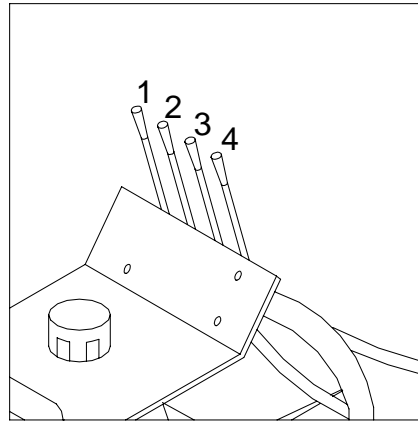
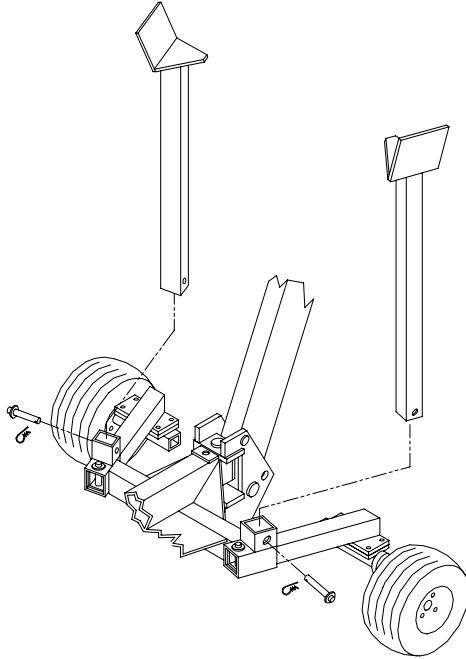
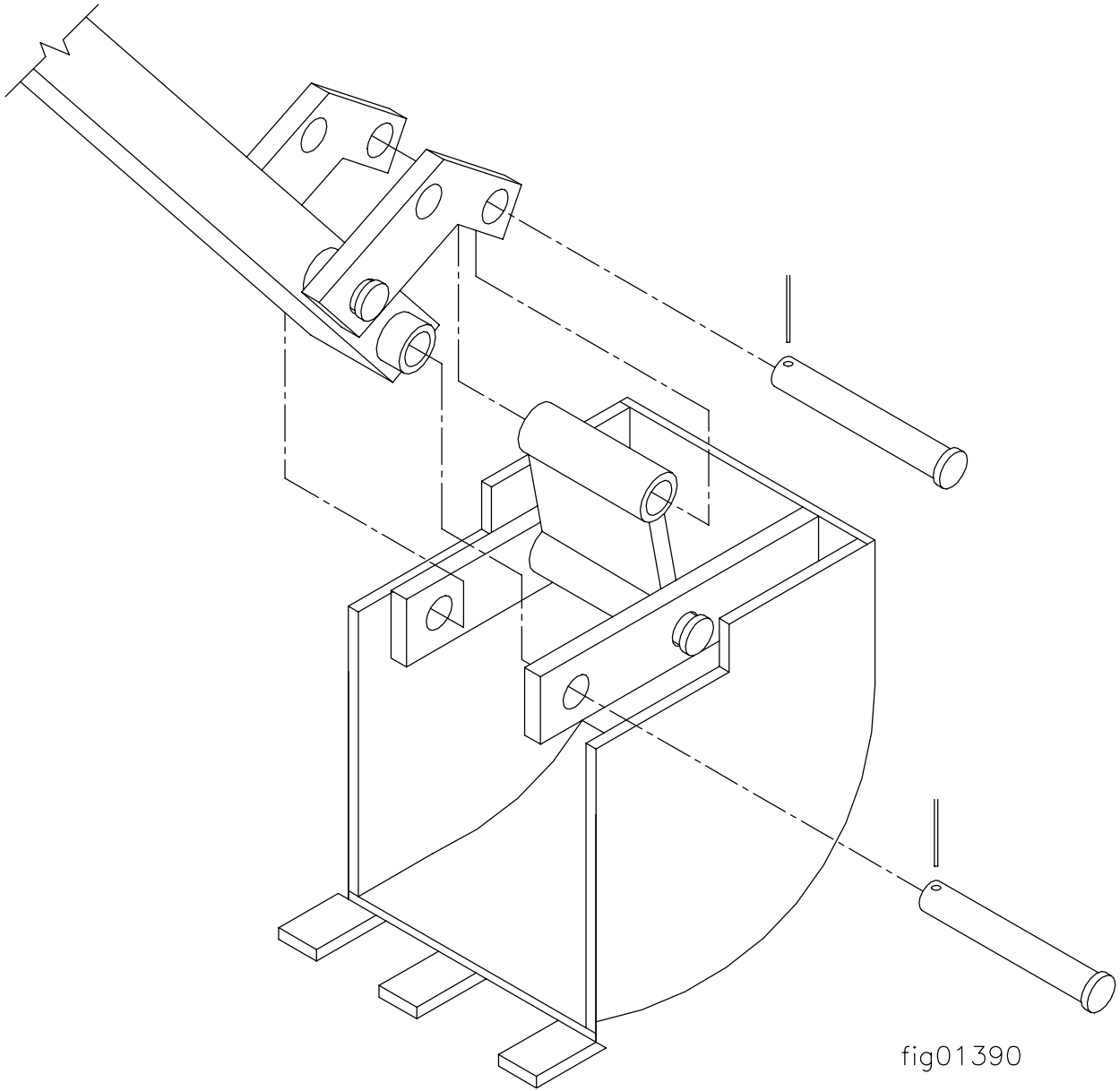


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- 9.) Roll the trencher away from the remaining packaging materials.

Assembly Instructions

- 1.) Attach bucket to boom with 1 x 8 pins. Secure 1 x 8 pins with cotter pins.



Hydraulic Oil

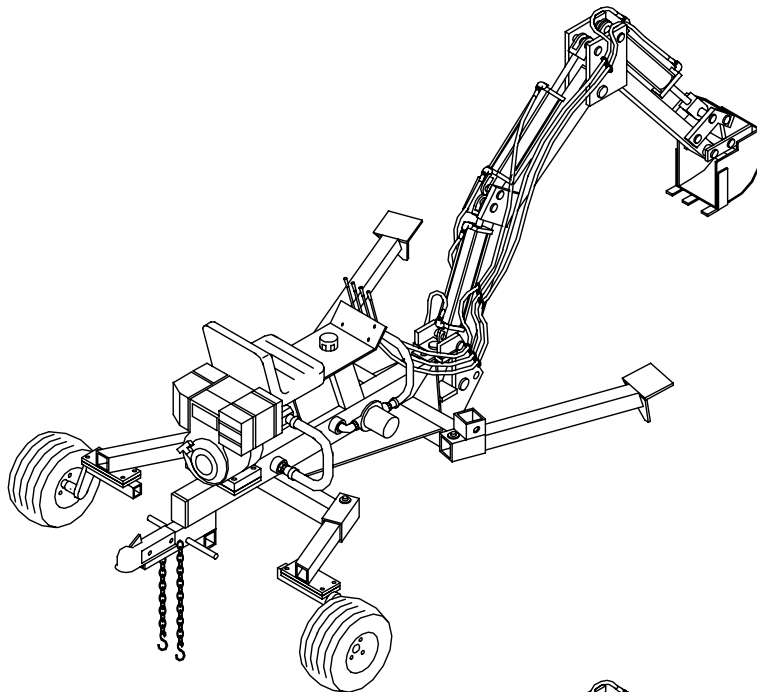
- 1.) As you sit in the operator seat, there is an oil sight gauge under left side of the seat. The oil sight gauge is in the hydraulic oil tank.
- 2.) Most hydraulic oil is yellow-green in color. If the tank is full, the oil sight gauge should have a yellow-green tint. The oil level should be up to the black line at the top of the oil sight gauge.
- 3.) If the oil level is not up to the black line, remove the cap between the seat and control levers. Fill the tank slowly with 10wt hydraulic oil (Northern Item #4040) while checking the oil sight gauge. Once the tank is full, screw the cap back on the tank.

Changing the Hydraulic Oil

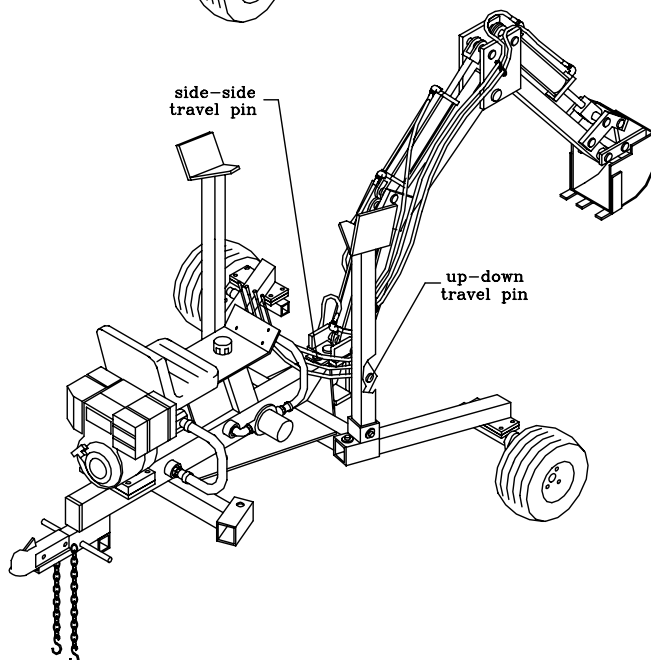
- 1.) Remove the drain plug on the bottom part of the frame below the engine. Once the old hydraulic oil is removed, tighten the drain plug back onto the tank. Be sure to properly dispose of the old hydraulic oil.
- 2.) Remove breather cap between the seat and control levers. Fill the tank with 10wt hydraulic oil (Northern Item #4040), while checking the oil level on the sight glass. Pour slowly to allow air to get out of the tank easily. The oil level should be up to the black line at the top of the oil sight gauge. Screw the cap back onto the tank.
- 4.) Remove the up-down travel pin and the side-to-side travel pin.
- 3.) Start the engine and run at slow idle.
- 5.) Push and pull lever #4 back and forth 6-8 times to remove air from the hydraulic lines. While moving the lever, watch the clear hose on the right side under the control levers. If there is a stream of bubbles, that is normal. If a foamy solution is moving through the tube, air is still in the oil. Keep pushing and pulling the lever until the stream of bubbles appears. After lever #4 is completed, do the same with lever #3, lever #2, and lever #1. Watch the oil level gauge as you complete each lever. You may have to add more hydraulic oil to the tank to complete all four levers. Once all four levers are done, fill the tank up to the black line on the oil sight gauge in the hydraulic tank. The whole hydraulic system contains about 2-1/2 gallons of oil. Shut off the engine.
- 6.) Reattach the up-down and side-to-side traveling pins.

Towing the Trencher

- 1.) Always obey all state and local regulations when towing the trencher on public roads or highways.
- 2.) Never allow anyone to sit or ride on your trencher. They could easily fall off and be injured.
- 3.) The trencher is not a trailer. Do not carry any cargo on the trencher. It can fall off and endanger you and other drivers.
- 4.) Be certain the trencher is securely attached to the towing vehicle before towing. The safety chains should be hooked onto the vehicle with sufficient slack for turning allowance. Always secure trailer hitch with locking bolt.
- 5.) Be sure to secure the boom up and centered with the up-down and side-to-side travel pins provided. With the engine off, slightly lower the boom to lock it in place and prevent it from swinging. Also, curl the bucket and arm in to achieve a compact towing configuration.
- 5.) Be sure the outriggers are secured in the vertical position before towing. Do not tow with outriggers down.
- 6.) Be aware of the added length of the trencher when you are towing it behind a vehicle. Be careful not to jack-knife your trencher when backing the vehicle.
- 7.) Towing speed should be according to driving conditions. Use a "Slow Moving Vehicle" sign when driving on roads. Take extra care when driving on rough terrain.
- 8.) Disconnect the trencher from the towing vehicle before using the trencher.
- 9.) Grease wheel bearings annually, or after long trips, to extend the life of your bearings.



DIGGING MODE
(travel pins removed)



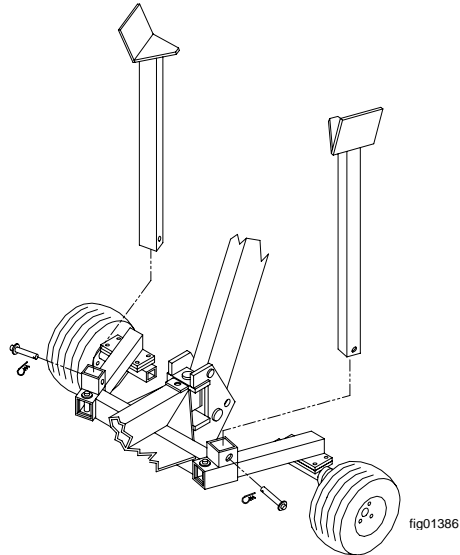
TOWING MODE
(travel pins installed)

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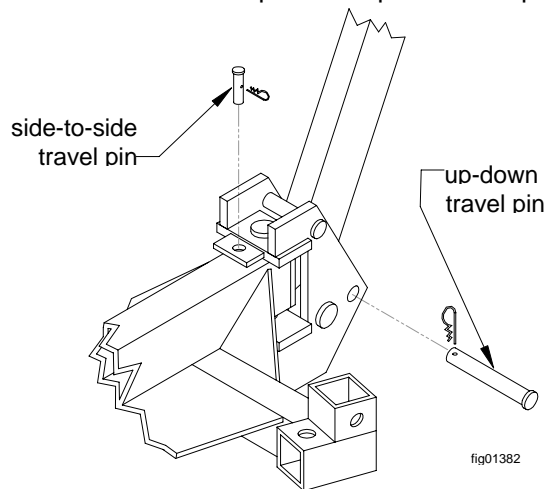
Digging Mode

After towing the trencher to the desired location, follow these set-up instructions. Do not sit on the trencher while setting it up.

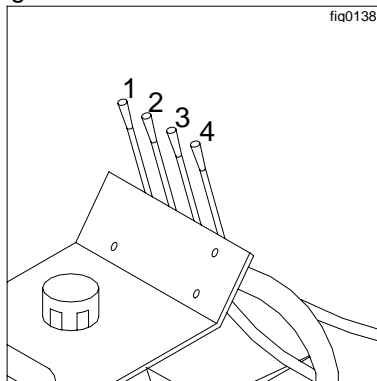
- 1.) Remove outriggers from their vertical position and set them aside. This reduces weight. Outriggers are heavy, use care when lifting.



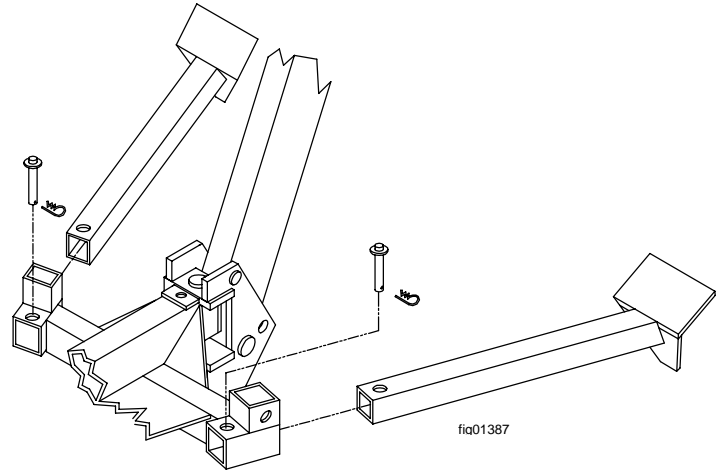
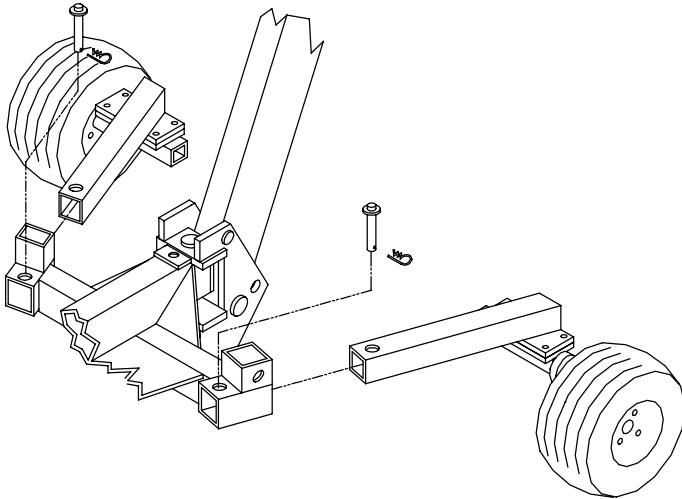
- 2.) Be sure to remove the up-down and side-to-side travel pins. Keep these two pins to re-insert for towing.



- 3.) Disconnect the trencher from the towing vehicle.
- 4.) Push lever #3 until wheels elevate off the ground 4-5 inches.



- 5.) Remove wheels. Looking at unit as if you were sitting in operator seat, put outrigger in front left slot, secure with pin and put front left wheel by rear right slot. Install other outrigger in front right slot, secure with pin and put front right wheel by rear left slot. Lower wheels by pulling lever #3.



- 6.) Position bucket next to the right side outrigger. Elevate the right side of the unit by pushing lever #3 until right side balances enough to install back -right wheel into slot. The right outrigger should be about 2 feet off the ground. Install back right wheel into slot and secure with pin.
- 7.) Lower right side of unit by pulling lever #3 to where the outrigger is touching the ground and the flat part of the bucket is flush to the ground. Insert the back-left wheel into the slot and secure with pin. If needed, move bucket next to the left outrigger and elevate the left side to allow wheel to be inserted into slot. Make sure all pins are secure.

The trencher is now in digging mode. Read the entire manual before attempting to operate the trencher. Like any industrial tool, proper training and preparation are needed to safely and efficiently operate the trencher.

Operation Instructions

- 1.) Before starting this trencher, review the “Rules for Safe Operation.” Failure to follow these rules may result in serious injury to the operator or bystanders. The machine owner should instruct all operators in safe trencher operation. Call all utilities or a one-call service to mark utility lines.
- 2.) Before digging with the trencher, make sure trencher is in digging mode.
- 3.) Run your engine only in well ventilated areas. Carbon monoxide fumes are odorless and colorless. Inhaling these gases can cause carbon monoxide poisoning. Never leave the machine unattended with the engine running.
- 4.) Never operate the machine when under the influence of alcohol, drugs, or medication.
- 5.) Always operate the trencher with all safety equipment in place and all controls properly adjusted for safe operation.
- 6.) Always operate the trencher at the manufacturers recommended speed. Always be ready to stop the engine and disengage the boom in case of emergency.
- 7.) Always keep hands, feet, and all other body parts clear of moving parts.
- 8.) Do not straddle or climb over the boom. Serious injury can result from a slip while straddling or climbing.
- 9.) Be sure the terrain allows wheels and outriggers to make firm contact with ground.
- 10.) Before digging, take the time to learn the control valves and the function each performs. Learn how they work in conjunction with each other. A description of what each control valve does is illustrated on the valve mounting plate. Practice using the control valves before digging, it will make for safer and more efficient trenching.
- 11.) Position bucket with teeth perpendicular to the ground.
- 12.) Extend the arm out. Then, lower the boom until resistance is met. Do not make the outriggers leave the ground.
- 13.) Curl the arm or bucket to scoop earth. Should either of these movements make the outriggers move, raise the boom slightly to make the outriggers dig in to provide support.
- 14.) Once the digging motion is complete, completely curl the bucket. Raise rotate the boom to clear the trench.
- 15.) Empty the bucket. Repeat steps 11-15 for each scoop.
- 16.) Do not attempt to straddle the trencher over a trench. It could fall into the excavation site and cause serious injury. Move trencher backward and away from trench as you dig.
- 17.) Do not refuel the engine until it has cooled for several minutes.

Moving the trencher

WARNING! It is possible to move the trencher under its own power when it is digging mode. This movement should be done with caution. Do not attempt these maneuvers until fully comfortable with the controls and only when the trencher is away from hazards. Do not attempt to straddle the trencher over a trench. It could fall into the excavation site and cause serious injury. Move trencher backward and away from trench as you dig.

Move Backward

- 1.) Make sure trencher is in digging mode.
- 2.) Curl the arm in and lower the boom to rest bucket teeth into the ground. The bucket should rest in the center of the work area, two feet from the front of the trencher frame.
- 3.) Raise the unit off its outriggers by lowering the boom.
- 4.) Once the outriggers are clear of the ground, rotate the arm out. This will cause the trencher to move backward.
- 5.) Raise the boom until weight is on the outriggers again.

Move Forward

- 1.) Make sure trencher is in digging mode.
- 2.) Rotate the arm out and lower the boom to rest bucket teeth into the ground. The bucket should rest in the center of the work area.
- 3.) Raise the unit off its outriggers by lowering the boom.
- 4.) Once the outriggers are clear of the ground, curl the arm in. This will cause the trencher to move forward.
- 5.) Raise the boom until weight is on the outriggers again.

Move Side to Side

- 1.) Make sure trencher is in digging mode.
- 2.) Raise boom and swing boom to the side where the new work area is located.
- 3.) Lower boom to rest bucket teeth into the ground and raise outriggers off the ground.
- 4.) Swing boom in the direction opposite the desired movement of the machine.
- 5.) Once the unit is facing the new work area, raise the boom until weight is on the outriggers again.

Maintenance and Storage

Maintenance

Before performing any maintenance on the trencher, it must be placed in maintenance mode.

- (a.) Turn off engine
- (b.) Move the control valves handle back and forth with the engine OFF to relieve hydraulic pressure.
- (c.) Rest boom on the ground.
- (d.) Unplug spark plug wire from spark plug
- 1.) Clean debris from the engine cylinder, cylinder head fins, blower housing rotating screen, and muffler areas. If the engine is equipped with a spark arrestor muffler, clean and inspect it regularly (follow Briggs and Stratton service instructions). Replace if damaged. Clear debris from movable parts, but only after the power source is shut off.
- 2.) Check to be sure all nuts and bolts are tight to assure the equipment is in safe working condition.
- 3.) Inspect all hoses and fittings for wear and leaks. Perform all inspections and replace all damaged and worn parts prior to starting the engine.
- 4.) Be sure all guards, shields, and safety features are in place.
- 5.) Inspect the suction filter.

What to Check	When To Check	What to Do
Tires	Each Trip	Check Pressure. The pressure rating is listed on the tire.
Hoses	Each Use	Inspect for wear and leaks. Replace all worn or damaged hoses before starting engine.
Hydraulic Fittings	Each Use	Inspect for wear and leaks. Replace all damaged fittings before starting engine.
Nuts and Bolts	Each Use	Check for loose bolts.
Hydraulic Oil	Each Use	Add oil as needed. Replace annually or when it appears dark or cloudy.
Boom Pins	Each Use	Grease.
Suction Filter	Annually	Replace.
Wheel Bearings	Annually	Repack with grease.

Storage

Before you store your trencher, make sure you do the following.

- 1.) Remove gasoline from the engine or add fuel stabilizer to the gasoline to prevent gumming.
- 2.) If adding stabilizer, run engine for five minutes.
- 3.) Turn engine OFF.
- 4.) Move the control valve handles back and forth with the engine OFF to relieve hydraulic pressure.
- 5.) Remove the spark plug.
- 6.) Pour one teaspoon of engine oil into spark plug hole. Cover spark plug hole with a rag and turn engine over several times to lubricate the cylinder.
- 7.) Replace spark plug.
- 8.) Never store the trencher where fumes might reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

Troubleshooting

PROBLEM	
Cylinder rod will not move	SOLUTION: A,C,E,O,Q,R,U,V
Slow cylinder shaft speed when extending or retracting	SOLUTION: E,J,L,O,R,S,T,W
Trencher will not dig or digs extremely slowly	SOLUTION: D,H,J,M,R,S,T,W
Engine stalls during digging motion	SOLUTION: K,N,P
Engine will not turn or stalls under low load conditions	SOLUTION: B,F,K,Q,V
Leaking pump shaft seal	SOLUTION: A,B,E,G,I
CAUSE	SOLUTION
A - Broken driveshaft on pump	Return pump for authorized repair
B - Engine/pump misalignment	Correct the engine/pump alignment
C - Loose shaft coupling	Correct the engine/pump alignment
D - Small gear section damaged	Items D through H require repair of the pump by an authorized service center
E - Gear sections damaged	
F - Frozen or seized pump	
G - Poorly positioned shaft seal	
H - Pump check valve leaking	
I - Plugged oil breather	Make sure the reservoir is properly vented
J - Excessive pump inlet vacuum	Clean inlet hoses and free them of any leaks
K - Low horsepower / weak engine	Have engine serviced at an authorized service center
L - Slow engine speed	Have engine serviced at an authorized service center
M - Low relief valve setting	Adjust while using a pressure gauge and with assistance of a professional
N - High relief valve setting	Adjust while using a pressure gauge and with assistance of a professional
O - Damaged relief valve	Return directional valve for authorized repair
P - High unloading valve setting	Adjust while using a pressure gauge and with assistance of a professional
Q - Hydraulic lines blocked	Flush and clean the hydraulic system
R - Too little oil to the pump	Add oil to the reservoir
S - Air in the hydraulic oil	Clean reservoir and add oil.
T - Control valve leaking internally	Return directional valve for authorized repair
U - Damaged control valve	Return directional valve for authorized repair
V - Blocked control valve	Flush and clean the hydraulic system
W - Internally damaged cylinder	Return cylinder for authorized repair

Component List – 4065 – Rev Q

ITEM	PART#	DESCRIPTION	QTY
1	39115	9hp Honda Engine	1
2	3007	Coupling, 1"	1
3	3009	Coupling Insert	1
4	3002	Coupling, 1/2"	1
5	779683	Pump Mounting Bracket	1
6	10564	3 GPM Hydraulic Gear Pump	1
7	50E86	#8 ORB x #6 JIC Elbow	1
8	777342	24" Hydraulic Hose Assembly	1
9	5087	29" Hydraulic Hose Assembly	1
10	777343	47" Hydraulic Hose Assembly	1
11	777357	43" Hydraulic Hose Assembly	2
12	5389	#8 ORB x #8 JIC Fitting	1
13	37660	84" Hydraulic Hose Assembly	1
14	777344	69" Hydraulic Hose Assembly	1
15	37661	133" Hydraulic Hose Assembly	1
16	777356	116" Hydraulic Hose Assembly	1
17	5019	#8 ORB x #6 JIC Fitting	8
18	5OR10 6	#10 ORB x #6 JIC Fitting	1
19	201616	Hydraulic Control Inlet	1
20	30149	Hydraulic Control Valve	2
21	30150	Hyd. Control Valve w/ Relief	2
22	201617	Hydraulic Control Outlet	1
23	201526	Valve Mounting Kit	1
24	5018	1/2 MPT x #6 JIC Elbow	7
25	32471	3" x 12" Tie Rod Cylinder	4
26	406519	Pin, 1x5	1
27	406518	Pin, 1x3.25	5
28	31257	3/4" SAE O-ring x 1/2" FPT	8
30	406510	Pin, 1x8	5
34	37878	Pin, 1x6	2
35	5026	#8 ORB x #6 JIC Flow Reducer	1
36	37836	Bucket	1
37	37835	Bucket Link	1
38	37863	Right Link	1
39	37834	Left Link	1
40	37833	Arm	1
41	406513	Pin, 1.5x6.7, greasable	2
42	777277	Boom	1
44	37818	Pivot Assembly	1

ITEM	PART#	DESCRIPTION	QTY
45	406520	Outrigger Pin	4
46	37877	Pin, 1.5 x 9.25, greasable	1
47	406515	Side-Side Travel Pin	1
48	40652	Outrigger	2
49	406501	Trencher Frame	1
50	50SOR101 2	#10 ORB x 3/4" FPT Fitting	1
51	5023	3/4" MPT x 3/4" HB Fitting	2
52	17141	3/4" Hose Clamp	2
53	505121	3/4" Clear Vinyl Hose	2
54	4020	Filter, 20 GPM	1
55	50SN121	3/4" MPT Nipple	1
56	50SE12	3/4" NPT Street Elbow	1
57	5390	#8 JIC x 1/2" HB Fitting	1
58	777119	1/2" Hose Clamp	2
59	2264	1/2" Bulk Hose	2
60	5013	3/4" MPT x 1/2" HB Fitting	1
61	4011	Suction Strainer	1
62	12412	Lug Bolt	8
63	780201	Wheel/Tire 16.5x6.5x8	2
64	124A	Dust Cap	2
65	82140	1/8" x 2" Cotter Pin	17
66	12559	1" Spindle Nut	2
67	124292	Bearing	4
68	124294	4 Bolt Hub w/ Race	2
69	124293	Seal	2
70	12422	Pair of Torsion Axles	1
71	38587	Coupler 3500#	1
72	1130	Safety Chain	2
73	777346	Right Leg	1
74	40659	Left Leg	1
75	1744	Seat	1
76	4066	Sight Gauge	1
77	4030	Filter Breather Cap	1
78	5024	3/8 MPT x #6 JIC Fitting	1
79	5025	3/8 MPT x 1/2 MPT Nipple	1
80	5027	1/2" NPT Steel Street Elbow	1
82	30313	.177 Bridge Pin	7
83	37543	Warning/Operating Decals	1
84	779681	Guard insert for 779683	2

Limited Warranty

Dear Valued Customer:

The NorthStar Product you just purchased is built with the finest material and craftsmanship. Use this product properly and enjoy the benefits from its high performance. By purchasing a NorthStar product, you show a desire for quality and durability. Like all mechanical equipment this unit requires a due amount of care. Treat this unit like the high quality piece of machinery it is. Neglect and improper handling may impair its performance. Please thoroughly read the instructions and understand the operation before using your product.

Limited Warranty

NorthStar shall warranty any piece of equipment manufactured, or parts of equipment manufactured, to be free from defects in material or workmanship for a period of 90 days for noncommercial/nonrental use and a period of 90 days for commercial/rental use from the date of purchase by user.

NorthStar shall warranty any wear item, including, but not limited to, valves, seals, pump diaphragms, hoses, and filter elements to be free from defects in material or workmanship for a period of 90 days from the date of purchase by user. This warranty applies to the original purchaser of the equipment and is non transferable. Verification of purchase is the responsibility of the buyer. Parts will be replaced or repaired at no charge, except when the equipment has failed due to lack of proper maintenance. Any misuse, abuse, alteration or improper installation or operations will void warranty. Determining whether a part is to be replaced or repaired is the sole decision of NorthStar.

NOTE: Some services performed by parties other than NorthStar may void warranty.

This warranty covers parts only. It will not provide for replacement of complete products due to defective parts.

Components not manufactured by NorthStar are guaranteed by their manufacturer and can be serviced at factory-authorized locations near you. Any costs incurred due to replacement or repair of items outside of a NorthStar approved facility is the responsibility of the buyer and not covered under warranty. NorthStar can supply you with the service center location in your area.

This warranty specifically excludes the following; failure of parts due to damage caused by accident, fire, flood, windstorm, acts of God, applications not approved by NorthStar in writing, corrosion caused by chemicals, use of replacement parts which do not conform to manufacturer's specifications, and damage caused by vandalism. Additional exclusions: loss of running time, inconvenience, loss of income, or loss of use, including any implied warranty of merchantability of fitness for a specific use.

Warranty does not cover items subject to normal wear such as tires, receptacles or any part subject to direct physical contact by the public. This warranty does not cover any personal injury or damage to surrounding property caused by failure of any part.

This warranty is in lieu of any other warranty expressed or implied and NorthStar assumes no other responsibility or liability outside that expressed within this warranty.

Please fill in the following information and have it on hand when you call in on a warranty claim.

Customer Number: _____

Date of Purchase: _____

NorthStar Serial Number: _____

Item Number: _____



Manufactured by
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