

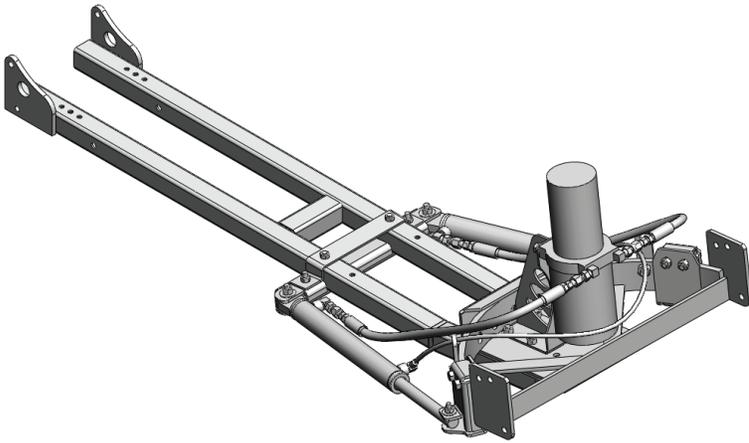
HYDRO-TURN KIT

Fits Moose push tube (Part #M93-11001)

Does not fit RM3 System

P/N: 2410 (4501-0279)

**CUSTOMER MUST RECEIVE A COPY
OF THIS INSTRUCTION SHEET AT
THE TIME OF SALE**



Item	Part #	Qty.	Description
1	2713-302	1	Hydraulic Pump
2	2713-600	2	Hydraulic Cylinder
3	2410-200	2	Hydraulic Hose
4	HDW9099	2	Pushlok Vent Fitting
5	2410-7	1	Hydraulic Pump Bracket
6	2410-1	1	Lower Push Tube Bracket
7	2410-2	1	Upper Push Tube Bracket
8	2410-3	2	Outer Swivel Clamp Plate
9	2410-4	2	Inner Swivel Clamp Plate
10	2410-8	2	Trip Spring Extension
11	HDW2076	2	5/16" x 1 3/4" Carriage Bolt
12	HDW9100	2	5/16" x 2 1/2" Carriage Bolt
13	HDW2160	2	1/2" x 1" Shoulder Bolt
14	HDW2167	2	3/8" x 1 1/4" Shoulder Bolt
15	HDW9029	4	3/8" USS Flat Washer
16	HDW7058	6	5/16" Nylock Nut
17	HDW9048	2	3/8" Lock Washer
18	HDW2106	6	3/8" x 3/4" Hex Bolt
19	HDW7061	6	3/8" Nylock Nut
20	HDW7060	4	3/8" Whiz Nut
21	HDW2126	4	3/8" x 1 3/4" Hex Bolt
22	HDW9095	2	7/16" x 1 1/4" Hex Bolt
23	HDW7084	2	7/16" Nylock Nut
24	HDW9096	1	1/4" Plastic Vent Hose 30"
25	HDW9098	2	O-Ring 90 Degree Pump Fitting
26	HDW9097	2	Male 90 Degree Cylinder Fitting
27	2410-20	1	Wire Harness
28	2410-25	1	Handlebar Switch
29	HDW9052	2	Relay
30	HDW184	10	Zip Tie
31	HDW9102	1	Male Bullet Connector
32	HDW9101	1	Female Bullet Connector
33	HDW9103	1	Scotchlok Connector

Hydraulic Package Assembly

STEP 1:

1. This hydraulic package needs to be assembled before installation. The components include the hydraulic pump, two o-ring fittings, two pipe fittings, two hydraulic hoses, and two hydraulic cylinders. You will also install two pushlok fittings and 1/4" plastic breather hose on the front of the cylinders.
2. Start by installing the male o-ring cylinder fittings (#25) onto the outlet ports of the hydraulic pump. These o-ring style fittings DO NOT require teflon tape to seal.
3. Install the male pipe fittings (#26) into the REAR threaded boss of each cylinder facing forward. You must use teflon tape on these fittings to ensure a proper seal. Install the pushlok fittings (#4) into the FRONT (closest to the shaft) threaded boss on each cylinder. Make sure they also face forward. Seal with teflon tape.
4. Install the hydraulic hoses (#3) from the pump to the fittings on the rear of each cylinder. Do not seal with teflon tape. You will install the 1/4" plastic vent hose (#24) after the unit is assembled to the push tube.
5. Note the location of the dipstick (fill location) on the pump as you will need to fill and bleed the system with fluid after it has been installed. It is located just above the hydraulic hose connection.

FOR QUESTIONS OR COMMENTS PLEASE CALL: 763-689-4800

Hydraulic Package Assembly Continued

NOTES

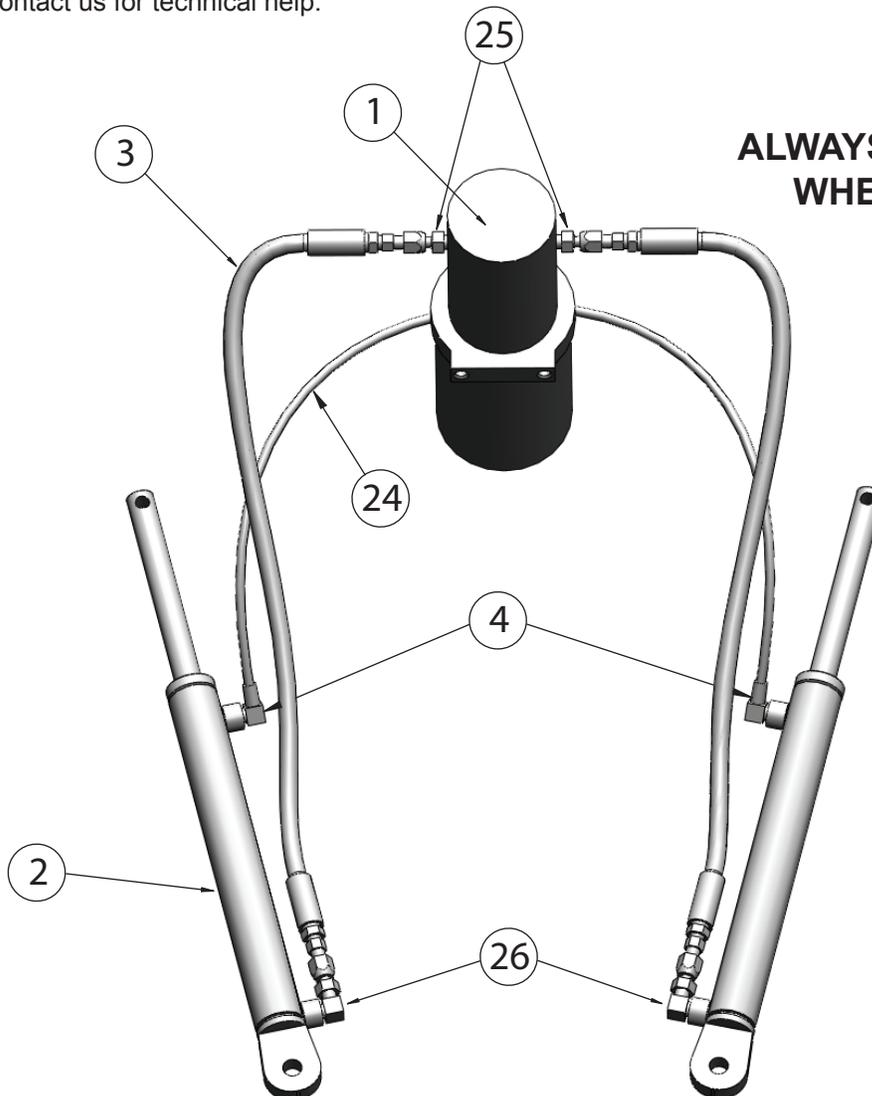
The pump is a heavy duty unit produced by Parker Hydraulics, a serial number is on the outside of the pump. In the event that you need replacement parts for you pump, please contact Parker directly. You may purchase a complete replacement pump from the phone number listed on this page but we will not be stocking internal replacement parts.

The cylinders are a non-rebuildable, one-piece welded unit. In the event of a failure, you can purchase a complete replacement cylinder from the number listed below.

Hydraulic hoses are also considered a replacement part and you should not attempt to fix or patch a cut or slit hose. Replacement hoses will come with the fittings attached and ready to bolt on.

TECHNICAL INFORMATION

1. The hydraulic system has a built in relief valve in case you hit a solid object with a large amount of force. This is a built in system that will allow the cylinder to quickly retract to help prevent damage to the plow, machine, or operator. This should not be considered a safety system and is not guaranteed to prevent damage or bodily injury. In the case you do trip the relief valve, simply press the in or out blade button on the handlebar switch and it will return to normal operation.
2. After servicing any part of the hydraulic system you will need to check the hydraulic fluid level. There is a dipstick on the pump between and below the fittings for the hydraulic hoses. Fill to between the center lines on the dipstick with Dextron ATF fluid. This is a self bleeding system as you use it so no further bleeding is necessary however operation may feel spongy for the first few minutes after servicing. If the problem persists, please contact us for technical help.

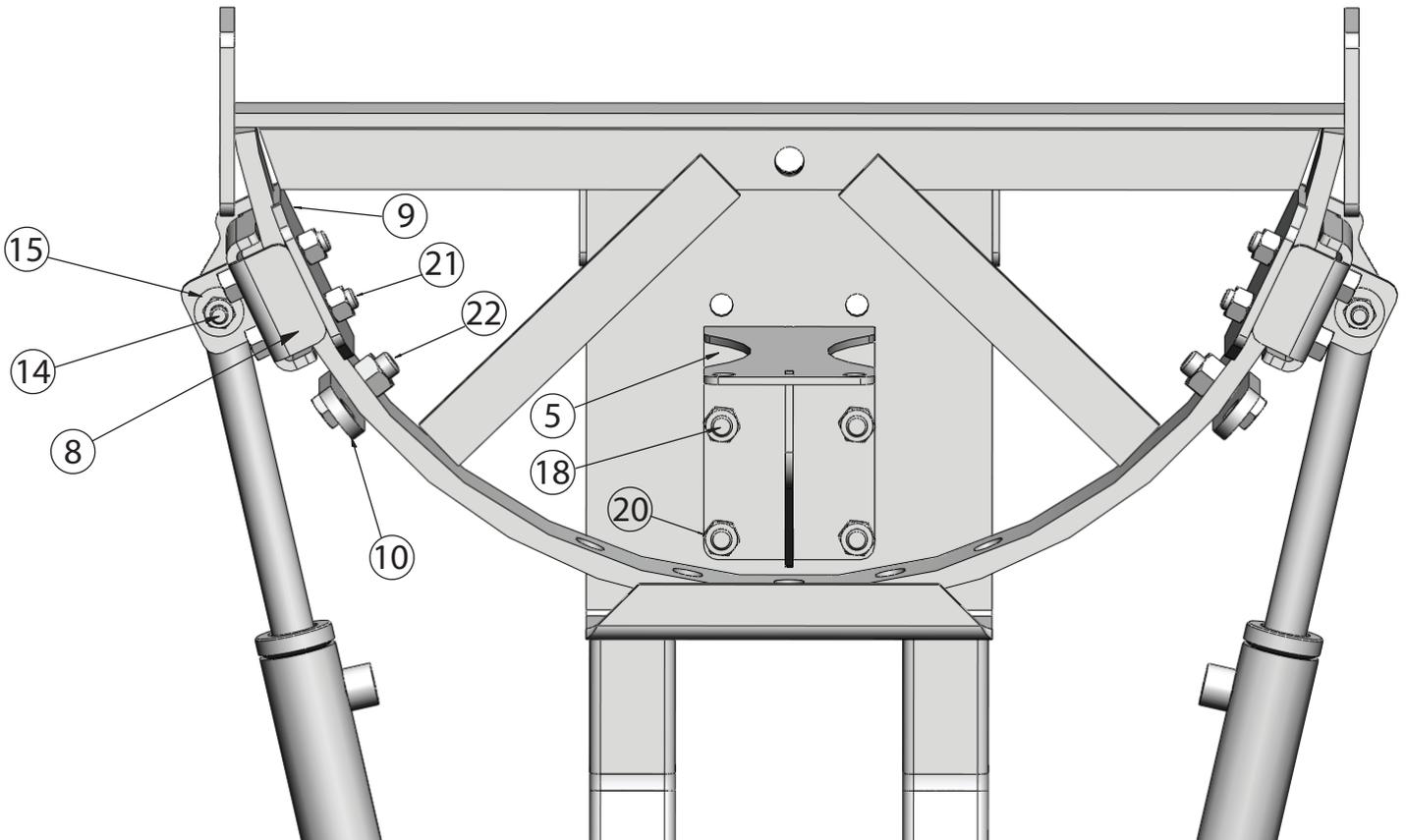


**ALWAYS USE DEXTRON ATF
WHEN ADDING FLUID.**

Mounting Bracket Installation

STEP 2:

1. Unbolt your blade position pin assembly from your push tube. This is the piece that you pull the handle to turn the blade. If your blade is installed, remove the trip springs.
2. Start by mounting the upper (#7) and lower (#6) push tube brackets to the push tube. The lower bracket is the larger bracket with the cutouts to fit up in the push tube bars. Line the two brackets up over the first two open holes in front of the welded crossmember. This will be approximately 12.5" from the swivel. See Illustration on next page. Secure the center holes that run through the push tube from the bottom with two 5/16" x 2 1/2" carriage bolts (#12) and two 5/16" nylock nuts (#16). Secure the outer two holes (not the cylinder mount holes) from the bottom with two 5/16" x 1 3/4" carriage bolts (#11) and two 5/16" nylock nuts (#16).
3. Next mount the inner (#9) and outer (#8) swivel clamp plates to each side of the swivel. The flat plate goes on the inside of the swivel and the formed plate goes on the outside. The bottom of the outside plate fits into the groove of the inside plate. Locate the plates between the welded swivel endplates and the hole for the trip spring. Push them forward until they stop against the push tube. Secure in place on each side with two 3/8" x 1 3/4" hex bolts (#21) and two 3/8" nylock nuts (#19).
4. Mount the pump bracket (#5) to the push tube plate in the center of the swivel. Use the set of 4 holes closest to the inside of the swivel (away from the blade). There should be two open holes left closer to the blade. Orientate the bracket so the vertical flat side is facing the blade. Bolt in place from the bottom with four 3/8" x 3/4" hex bolts (#18) and four 3/8" whiz nuts (#20).
5. Install the trip spring extension brackets (#10) to the swivel through the hole for the trip spring. Orientate them so they are extending upward above the swivel. Secure with two 7/16" x 1 1/4" hex bolts (#22) and 7/16" nylock nuts (#23).

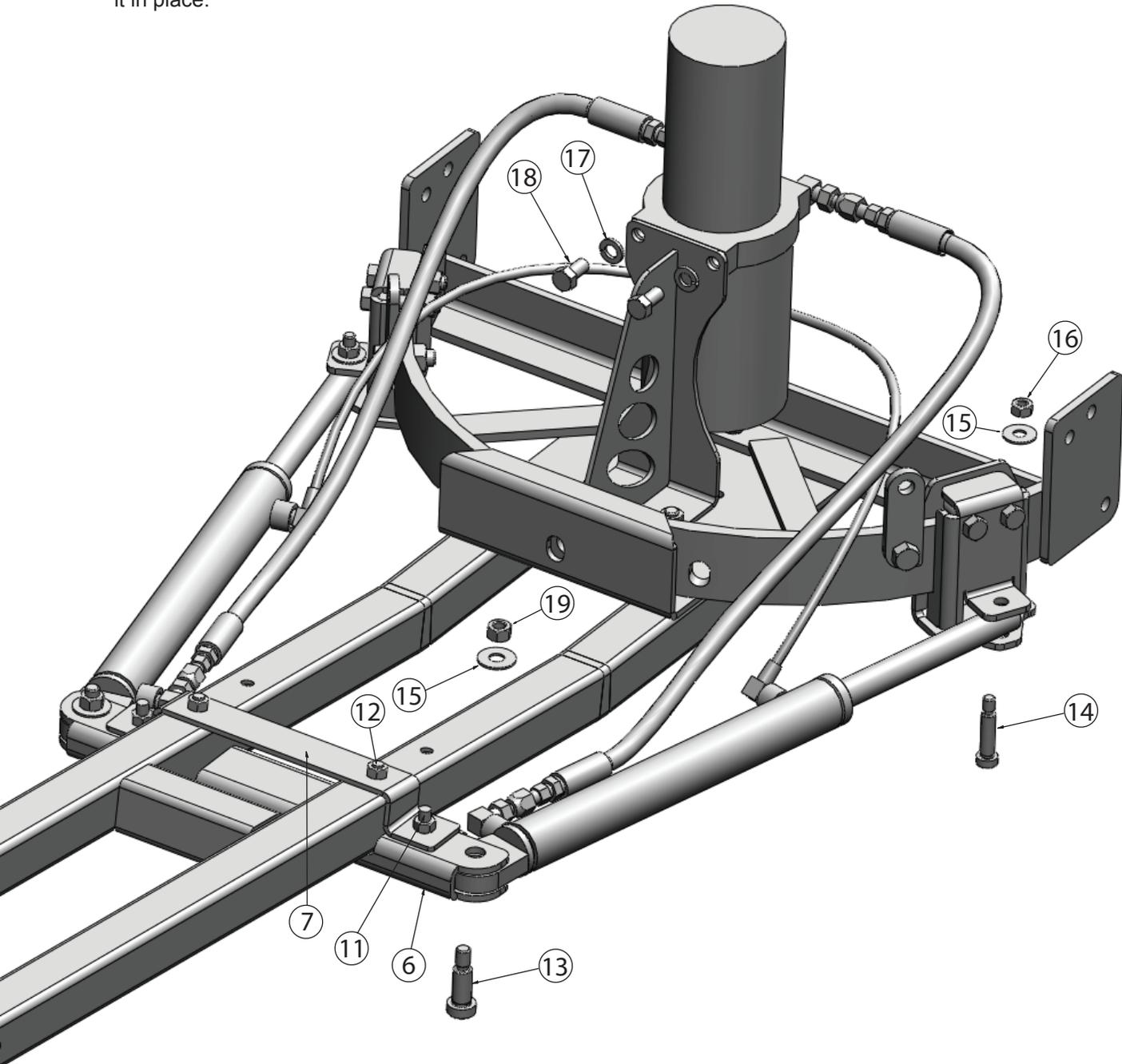


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Install Hydraulic Package to Push Tube Brackets

STEP 3:

1. You can now install the hydraulic system onto the push tube brackets. Install the hydraulic pump to the pump bracket. Bolt in place using two 3/8" x 3/4" hex bolts (#18) and two 3/8" lock washers (#17). The hoses will be on the blade side of the push tube.
2. Install the rear of each cylinder into the push tube brackets. Secure from the bottom with two 1/2" x 1" shoulder bolts (#13), two 3/8" USS flat washers (#15), and two 3/8" nylock nuts (#19). Be sure to orientate the cylinders so the fittings and hoses are to the inside of the cylinder routing towards the pump.
3. Install each cylinder shaft to the swivel brackets. Secure from the bottom with two 3/8" x 1 1/4" shoulder bolts (#14), two 3/8" USS flat washers (#15), and two 5/16" nylock nuts (#16).
4. Make sure each hydraulic hose is clear of any obstacles and will not kink when turned. Using the 1/4" vent hose, install one end into the cylinder fitting. Push straight in using a firm push to get a tight seal. Pull on the hose to make sure it will not come free. Follow the hydraulic lines to the back of the pump and around to the other cylinder. Cut the 1/4" hose to the proper length and push the end firmly into the opposite cylinder fitting. Zip tie the 1/4" hose to the hydraulic hose to keep it in place.



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Wire Harness Installation

STEP 4:

1. Disconnect the battery. Take a good look at your machine to get a plan for routing your wire harness and mounting the relays. You will want to mount the relays under the seat, in a storage compartment, or some other out of the way area. You will want to keep them out of water, mud, snow, etc as much as possible to avoid damage.
2. The end of the wire harness with the black two wire plug will go to the hydraulic pump. The other end of the harness with the red and black wires will go to the battery. Route the harness through your machine keeping enough harness out front to connect to the pump. Be careful to avoid sharp edges or moving components.
3. Find a suitable protected spot to mount the relays making sure the wire harness is routed to reach. Screw into place using the included self tapping screws. Plug the wire harness into the relays, it does not matter which relay goes to which plug.
4. Mount the handlebar switch to the handlebars in a convenient to reach place. This may require moving the master cylinder or other controls over slightly to make room. You can also try to mount it on top of your winch switch where possible. The green wire of the handlebar switch will connect to the green wire of the wire harness. The black wire of the handlebar switch will connect to the yellow wire of the wire harness. You may need to trim the excess wire then install the appropriate bullet connector. Zip tie the wires in place
The red wire of the handlebar switch will go to switched 12v power. You can normally tap into a wire in the headlight pod or near the handlebars using the included connector. For safety, this must only have power when the ignition is in the ON or RUN position. After routing the wires, zip tie in place.
5. If your plow is not already installed on the machine, you can do so now. Plug the wire harness into the pump. Be sure there is enough loose wire for the full up and down travel of the plow.
6. You can now connect the red harness wire to the positive terminal of the battery and the black harness wire to the negative battery terminal. **DO NOT TRY TO USE UNTIL YOU ADD HYDRAULIC FLUID IN THE STEP BELOW.**

Hydraulic Pump Fill and Bleeding

1. Remove the round black dipstick from the front of the hydraulic pump and add automotive ATF fluid to the full line on the dipstick. Replace the dipstick. This is a self bleeding system and will require you to cycle the blades to remove the air from the system.
2. Turn the ignition on and cycle the blade side to side a couple times or until it stops moving. Remove the dipstick and refill to the full line. Replace the dipstick.
3. Repeat this procedure 3-5 times until the fluid level remains constant. The system may feel spongy when you first use it as it may still have some air bubbles in the system. This will go away after using for a short period.

ALWAYS USE DEXTRON ATF WHEN ADDING FLUID.

Operation

1. You are now ready to use your Hydro-Turn plow kit. In the event that you hit an immovable object, the built in relief valve will allow the blade to fall back to prevent damage. Simply hit the in or out button to re-pressurize the system.
2. While possible to move the blade while plowing, it is advised to change your blade angle while at rest or when the blade is off the ground.
3. For technical help or to order replacement parts, please contact our customer service department at the number listed below.

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