LITTLE TRIPPER HYDRAULIC CATWALK

OPERATION MANUAL

Rev. 0 Date October 8, 2010

Introduction

WELCOME

Your Little Tripper Hydraulic Catwalk is a product of **Pipe Wranglers.** We are the leaders in workplace safety primarily in the Drilling and Service Rig Sector of the Petroleum Industry, related to Tubular Products. We develop and produce automated tubular pipe handling systems for the industry which are among the most modern available in the world, today.

Pipe Wranglers origins date back many years and many successful products ago. Since January 2001, many units have been built with various improvements, with help from Rig Contractors & Crews and Petroleum Producers. **Pipe Wranglers** will continue to produce and improve automated Pipe Handling Systems for the Oil and Gas Industry.

Manufacture of Tubular Pipe Handling systems under **Pipe Wranglers** name commenced a number of years ago with the introduction of the first in a succession of innovative models. Renowned for their performance character and safety features. The main production plant is in Red Deer, Alberta, Canada where design, development and testing facilities are also located. Importation and distribution of Tubular Products Handling Unit, spare parts and accessories are handled exclusively by **Pipe Wranglers**

This manual for the Little Tripper Hydraulic Catwalk provides some practical advice on operating and caring for your unit. A technical description of the various systems is given in a special section. Read through the manual before operating the unit for the first time and then keep it readily available for further reference.

A table of contents is provided for each section of the manual.

Since the Policy at **Pipe Wranglers** is one of continual improvement, we retain the right to incorporate modifications and alter specifications during production without prior notice.

Best Wishes

Pipe Wranglers

FOREWORD

The safe and effective operations of the Little Tripper Hydraulic Catwalk, requires skill and alertness on the part of the certified operator.

To develop the skills required, the certified operator must:

- Receive training in the proper operation of the unit and all of its components
- Understand the capabilities and the limitations of the unit
- Become familiar with the unit and its components and see that they are maintained in good condition at all times
- Read and fully understand the **WARNINGS** and **OPERATING PROCEDURES** contained in their **OPERATING MANUAL**
- Never operate or work on the Unit without Proper Personal Protective Equipment (PPE). PPE required to operate the Hydraulic Catwalk is as follows: Hard hat, steel toe boots, safety glasses and earplugs.
- Only allow **CERTIFIED** technicians access to operation of the unit.
- Follow proper procedures for Rig-up and Rig-out.

In addition, a new operator must be trained by a qualified person, either by a **Pipe Wranglers** technician or a qualified person who has been certified by a Pipe Wranglers Technician to operate the Hydraulic Catwalk. The trainer must guide a new operator through several load-handling applications before the new certified operator attempts to operate the equipment.

Once fully trained, qualified and certified, including a working knowledge of the information contained in the operations manual, the new certified operator may commence operation of the unit. It is the employer's responsibility to make sure that the certified operator can see, hear and has the physical and mental ability to operate the equipment safely.

This Operating Manual contains basic information necessary for the operation and maintenance of the unit. **Pipe Wranglers** optional equipment is sometimes installed that can change the characteristics described in this manual. In this event, make sure that the necessary operating and maintenance instructions are available and understood by the operating team before operating the Hydraulic Catwalk.

Certified operators are required to be certified by Pipe Wranglers

This manual gives a basic understanding of the safety procedures and safe operation of the Little Tripper. It is still up to the customer to incorporate their own safety procedures with and around the Little Tripper. To enable safe operations

NOTE:

If, at any time you have a question or problem concerning your new Hydraulic Catwalk; remember that your Pipe Wranglers Representative is best qualified and equipped to serve your needs. With the proper treatment and service, your Little Tripper Hydraulic Catwalk should provide you with a long life of profitable and dependable service.

WARNING

**** Failure to follow these instructions can cause serious injury or death. The unit is to be operated by an Authorized and Trained Certified Operator ONLY****

Inspect the Unit before Use

Prior to starting the unit and at the beginning of each shift, perform a visual inspection of the unit. Make sure that the structure, controls and instrumentation are not physically damaged or excessively worn. Safe and reliable operation depends on a maintained unit. Report any damage or deficiencies to the site supervisor immediately and do not operate the unit until an assessment of the deficiency is done and if necessary corrected.
Do not operate with worn hoses, damaged fittings or cylinders. If the hydraulic hoses or cylinders need to be replaced or repaired, follow safe work practices and make sure that the Trough is down and the lines are depressurized. Removing the lines while they are pressurized may cause a **SERIOUS INJURY**,

Protect Your Self

Do not use the control levers as hand tools or other uses other than actual unit operation. Do not permit people near the unit controls during inspections or repairs, unless they are supervisors or part of the inspection/repair team. Never inspect, repair or perform maintenance on a machine that is running. If an inspection, repair or maintenance is required on this machine you must use the proper **LO/TO** (Lock-out / Tag Out) procedure; the machine must be turned off and the key must remain in the sole possession of the certified operator that is performing any of the aforementioned procedures until that procedure until that procedure is complete.

Keep a Clear Work Area

Do not store materials, tools or other equipment on or next to the unit. **Never go on the machine or permit others to access the unit while in operation**. Recognize all pinch points on moving components and maintain a safe distance from them. Observe all jobsite rules; be in complete control at all times. It is the operator's responsibility to insure that **NO ONE is on the Catwalk deck during operation**. Should anyone enter this **critical path**, cease operation and shut the unit down until they are removed. An amber strobe light has been added to this system as an extra precaution. It is also the operator's responsibility to insure that the strobe light is operational while the unit is running.

Use Common Sense

Do not leave machine running unattended particularly while the Trough is raised. Always listen for abnormal noises during operation. In the event of an abnormal sound immediately stop the unit (emergency shut down (ESD) if needed) operation and if possible, return the Trough to the Catwalk and secure the area for inspection. Notify the site supervisor immediately.

Safety Precautions

Equipment Operations

All mechanical equipment can be dangerous when used without care or if it is in poor condition.

Ensure that the certified operator reads and understands the unit and decals and consults the manual before inspection, maintenance and operations.

Safety is not a matter of warning. Every time the certified operator is working with the Little Tripper, the certified operator must be able to foresee any risks and know how to avoid them.

Never begin a new job or maintenance operation without being sure you have the appropriate knowledge to undertake the task and ensure yourself and other people in the environment will be safe.

Ample loose clothing, watches or bracelets, can in some circumstances, be dangerous. Therefore, they are not recommended to be worn on the job. The certified operator will not consume any alcoholic drinks or medications liable to generate sleepiness or drowsiness prior to or during the operation of the Lil' Tripper Hydraulic Catwalk.

The certified operator must be informed of the technical instructions and specifications given by the manufacturer, such as unit weight, unit motion, working pressures, flow rates, hoses, dimensions and connections to hydraulic circuit. Failure to follow these instructions could result in permanent damage to the Lil' Tripper Hydraulic Catwalk or serious injury to the certified operator.

Communication between the rig and the Hydraulic Catwalk operator is absolutely essential. When raising or lowering the Trough, make sure hand signals are well understood and use the radio communication if hand signals are not visible.

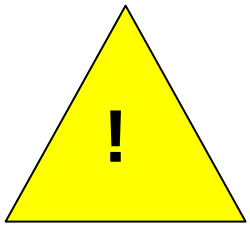
Unexpected movement, when raising or lowering the tubular product into place, could result in a serious injury:

- Be sure that the Catwalk is level and stable (very important)
- Keep the area clear when the unit is operating
- When making adjustments to pinned connections, **DO NOT** use your fingers to "feel" pin alignments

It is suggested that a walk around is performed and the Catwalk is visually inspected on a daily basis.

There is a check list on the back of this manual.

LITTLE TRIPPER – HYDRAULIC CATWALK



For Diesel Engines: diesel engine exhaust and some of its constituents are known to cause cancer, birth defects, and other reproductive harm.

Major Components

Side View

Start Up

The diesel engine for the Hydraulic Power Unit (HPU) should be checked and started before rig up. This is necessary for two reasons; first to bring the engine to operating temperature and secondly, the HPU will be required to position the Catwalk.

It is the Operators responsibility to insure that **NO personnel are on the Catwalk deck when the unit is running.** An amber strobe light has been added as an extra precaution and warning. It is also the operator's responsibility to insure the amber strobe lights are operational when the unit is running.

1. Check oil levels on motor
2. Check Hydraulic oil level through site glass
3. Check antifreeze levels. Make sure Catwalk is clear of personnel
4. Push Murphy Switch
5. Turn key to the left position for glow plug (3-4 seconds)
6. Turn key to start position
7. Hold Murphy switch till oil pressure rises (between 50-80 psi)
8. Idle engine for 5-10 min (warm up period)
9. During warm up check all lights
10. Idle engine to max before engaging Hydraulics

Each unit comes with Emergency Stop beside control panel and on the remote control.

Emergency Stop button

Rig Up

Before backing the Catwalk into position, check area for hazards. Back the Catwalk into the appropriate position using the centerline of the Trough as a guide. Back the unit towards the rig with the Trough centerline pointing for the hole centre. Stop the unit approximately 20 feet from the vertical edge of the work floor (if using Trough extension use end of extension for 20 foot mark; page 13) and start the unit. Raise the Trough to the highest point of the cycle for this particular job, turn off unit, and then continue to back the unit towards the rig. With the appropriate observers placed to help guide the unit back, ensure the Trough is dead centre to hole centre. Back the unit up until the Trough is at the most convenient distance from the hole centre to handle the Tubulars safely. Start unit, lower the Trough to make sure that there is enough clearance to miss work floor, set the Trough back into down position. Set outriggers (page 18) so truck may be moved, then set Catwalk to preferred height. Laying down pipe set Kickers (page 20) to preferred side. If picking pipe up set Indexers (page 21) to preferred side then insert pick up arm to proper length (page 21) to safely pick up pipe. If using remote control (page 24) plug into preferred end of Catwalk (page 24). Test remote control, lift Trough, and move Skate (page 21)

Catwalk is now ready to work. Remember Safety First **No one on Catwalk while in operations.**

Failure to line up the Trough and hole center will create a dangerous environment if the tubular is dropped from the elevators into the Trough while in the raised position during the lay down sequence.

Important

Read and understand the entire manual before starting unit.

Trough

The Trough contains the Skate and the kickers and is the main part to handle the tubular. The Trough has nine adjustable holes that allow adjusting its final height making it suitable for different sub heights or work floors.

In the operation of the Trough, it is vital that the operator feather the control to start and stop the cycle.

Jerking the valve full open to start and closing it abruptly to stop causes unnecessary stresses on the entire unit and will fatigue the unit and shorten its life span. **Never allow an employee that show little or no regard for the equipment to continue operating it.** Always bare in mind that the life of the unit is affected by the way you operate it and the main stresses are generated while lifting the Trough.

Remember, the Trough is a major pinch point KEEP OFF WHILE IN OPERATION

Trough Extensions

For longer Tubulars such as casing, a Trough extension has been supplied. **DO NOT** use extension without first bolting the extension to the Trough. **Never bolt extension to Trough with debris in between (mud, sand, dirt, snow, etc)**

The trough and the trough extension piece distinctively hook together.
Once hooked install bolts & tighten to secure attachment

Lifting and positioning the trough extension is a two-man job.

Trough Adjustment

Prior to doing any work on the Catwalk that requires the Trough to be elevated, read and understand this manual. Do not attempt any maintenance or adjustments with the engine running!!!

Do not attempt any maintenance or adjustments without the Trough brace installed!!!

- Raise the Trough to a comfortable height to remove the retainer caps from the ends of the Trough/arm pin. (PICTURE #1)
- Clean the inner surface of the pin hole to be used in both the arm and Trough, using suitable solvents. (PICTURE #2)
- Apply a light coat of grease to the inner surface to allow the pin to be inserted without hanging up on dirt or grime.
- Lower the Trough completely. (PICTURE #3)
- Insert the slide hammer (supplied) through the appropriate hole in the frame of the trailer and screw it into the threaded end of the pin. Install spare pin into chosen height hole and remove pin. **Do not operate Catwalk with two pins in.** (PICTURE 4&5)
- Using the slide hammer, remove the pin completely, removing any old grease, then re-insert it into the proper hole, which will allow the Trough to achieve the desired height. When putting pin into bushings align arm and Trough by raising or lowering arm as needed (this movement will be minimal). (PICTURE #6)
- Grease pin using grease Zerk adaptor. Remove this adaptor immediately after greasing and replace cap. Failure to do so will result in damage to the main pin, the adaptor and possibly the arm if it is accidentally lowered with this grease device still installed.
- Replace pin retainer caps.

(Pictures on next page)

Picture 1

Picture 2

Picture 3

Picture 4

Picture 5

Picture 6

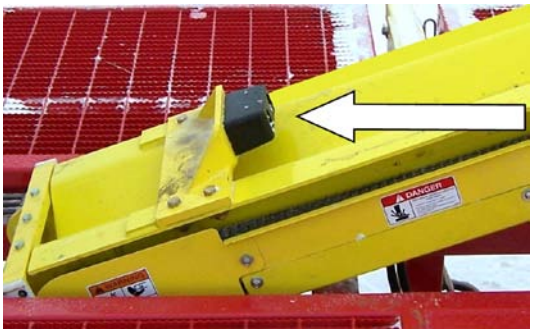
Trough Elevated

Procedure for working on the Catwalk when the Trough in the elevated position. The Trough's blocking device consists of a shaft that is inserted through brackets on the lower part of the main arm. After the shaft is inserted, the arm will be lowered so pin rests on the top of the Catwalk frame. At that point service or maintenance may be performed on the unit. While work is being performed shut unit down. After service or maintenance is complete and all personnel are standing free from the unit. Then the arm may be raised, removing the blocking pin and stored back in the tool box.

Skate

The Little Tripper is equipped with a main Skate driven by a chain and hydraulic motor. The main Skate is designed to push the pipe up to the rig floor or to receive the pipe during the lay down of the tubular. It is important to operate the Skate in a careful manner. Always keep the Skate in contact with the tubular and be careful when the Skate is at the ends of the Trough since the stoppers are mechanical. When pushing the tubular, make contact with it gently.

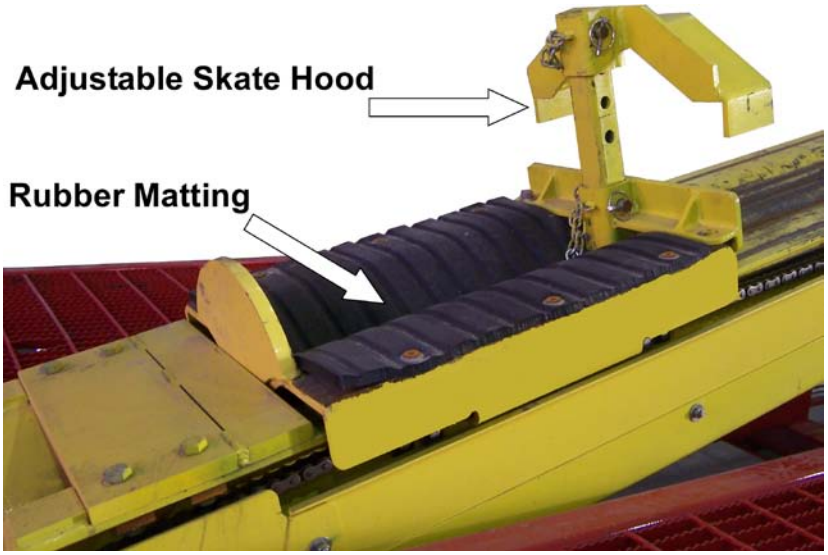
Note: If applicable your unit may have a Rubber Skate Bumper located at the back end of the Trough pictured below.
This Rubber Skate Bumper is designed to prevent inadvertently contacting the back of the Skate with the back of the Trough in a rough manner which could chain failure.



When lying down Tubulars there are two methods:

1. Run the Skate up to receive and control the return of the tubular into the Trough. This is required with heavy Tubulars such as drill collars.
2. When the angle to the rig floor is near non-existent, take the solid butt plate off the front of the Skate. Run the Skate to the front of the Trough. Place the tubular into the rubber Skate with the Rig's blocks lowering, return Skate as required.

While picking up smaller Tubulars sometimes the weight of the blocks with the elevators tend to make the tubular jump out of the Trough. To avoid this, install the "Adjustable Hooded Butt Plate" which can be manually adjusted to different tubular diameters. This will eliminate the tubular from jumping out of the Trough.



Never use Skate while Kickers are engaged

Outriggers

The Outriggers form two functions:

1. To stabilize and level the Catwalk
2. To aid in positioning the Catwalk to "tier" tubulars on Pipe Racks.

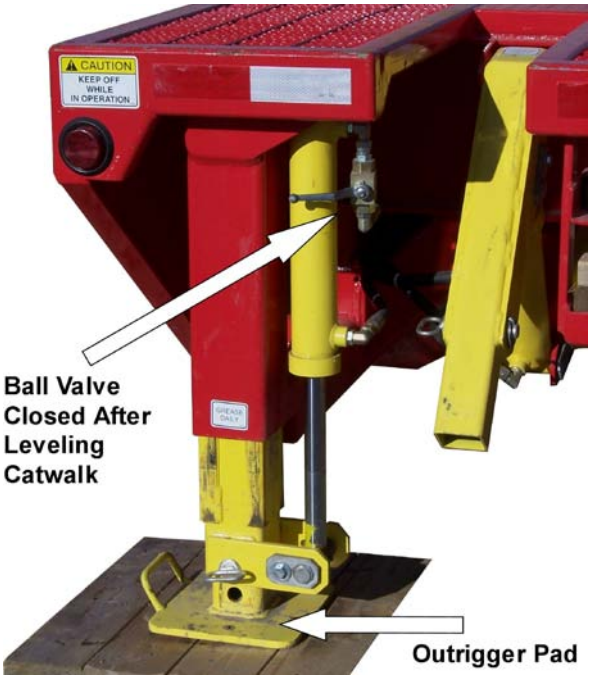
Each of the four outriggers are powered by a hydraulic cylinder operating a rugged jack structure. Each outrigger contains a drop leg for further adjustment.

Note: If applicable your unit may also contain 2 manual pinned Drop Legs located in front of the trailer wheels and pictured right. These Drop Legs provide added support to the Little Tripper while in operation. ***NEVER retract the Outriggers before placing these Drop Legs in the storage position.***

This will allow the operator to precisely level the unit. Each Outrigger is fitted with a lock out Ball Valve to safeguard against accidental operation or creeping. **Remember to OPEN the ball valve BEFORE activating the outriggers, and CLOSE the valve AFTER height adjustments have been made.** In the event the Tubulars are to be "Tiered" on the pipe racks, the Outriggers simply raise the Catwalk to the height of the next tier and the kickers "kick" the tubular from the Trough, across the Catwalk frame onto the indexers then onto the pipe racks. If the unit is operated properly, no one should have to come in contact with the tubular until it is on the pipe racks.

Outriggers Procedures

Open ball valves on each outrigger cylinders. After the Catwalk has been leveled, close ball valves on each outrigger cylinders.



Multi-Row Tiering

The Hydraulic jacks can be raised the full stroke and the drop legs can be lowered and pinned. Wooden pads can be placed under the Hydraulic jacks to suit the height of the required tiers. Now lower the Hydraulic jacks to level the unit to the proper height to allow the next tier to be rolled off the Catwalk and onto the pipe racks.

NOTE:
There are eight larger wooden pads supplied. These larger pads should be the Base Pads.

Operational Position

Storage / Travel Position

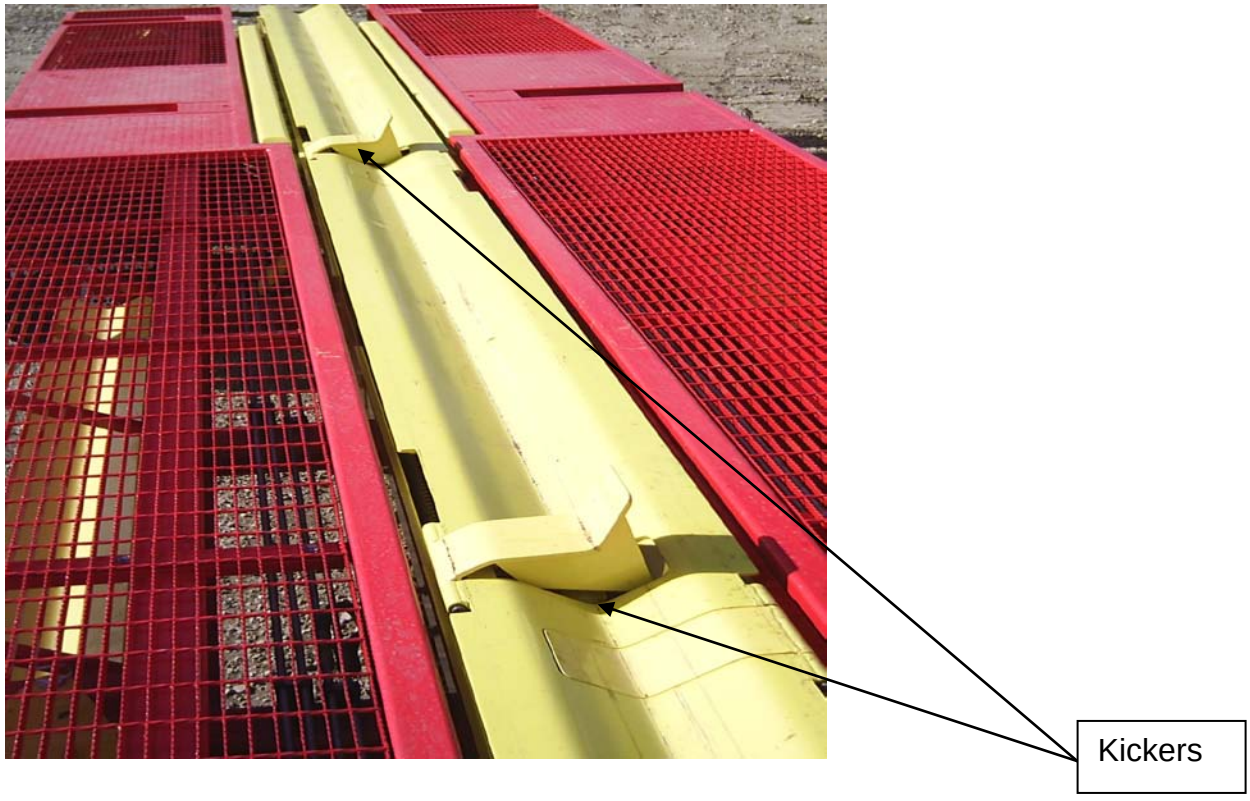
Kickers

To eject the Tubulars from the Trough during the lay down process, the Trough is fitted with two left and two right Trough kickers. The right and left kickers cannot be operated together as they are on the same hydraulic circuit and the left and right kickers are separated by a selector valve. This valve also selects the left and right indexers, which are explained on the following page. The picture on the following page shows the location and setting of the selector valve.

WARNING

- **DO NOT OPERATE THE KICKERS WHILE USING THE SKATE OR WHEN THE TROUGH IS UP. FAILURE TO OBSERVE THIS WARNING WILL RESULT IN EXTENSIVE DAMAGE TO THE KICKER MECHANISM AND CAUSE POSSIBLE DOWNTIME.**

- **ALWAYS CYCLE THE KICKERS BEFORE STARTING THE OPERATION AND WHEN THE LITTLE TRIPPER HAS BEEN IDLE TO INSURE THEY RISE AT THE SAME RATE.**



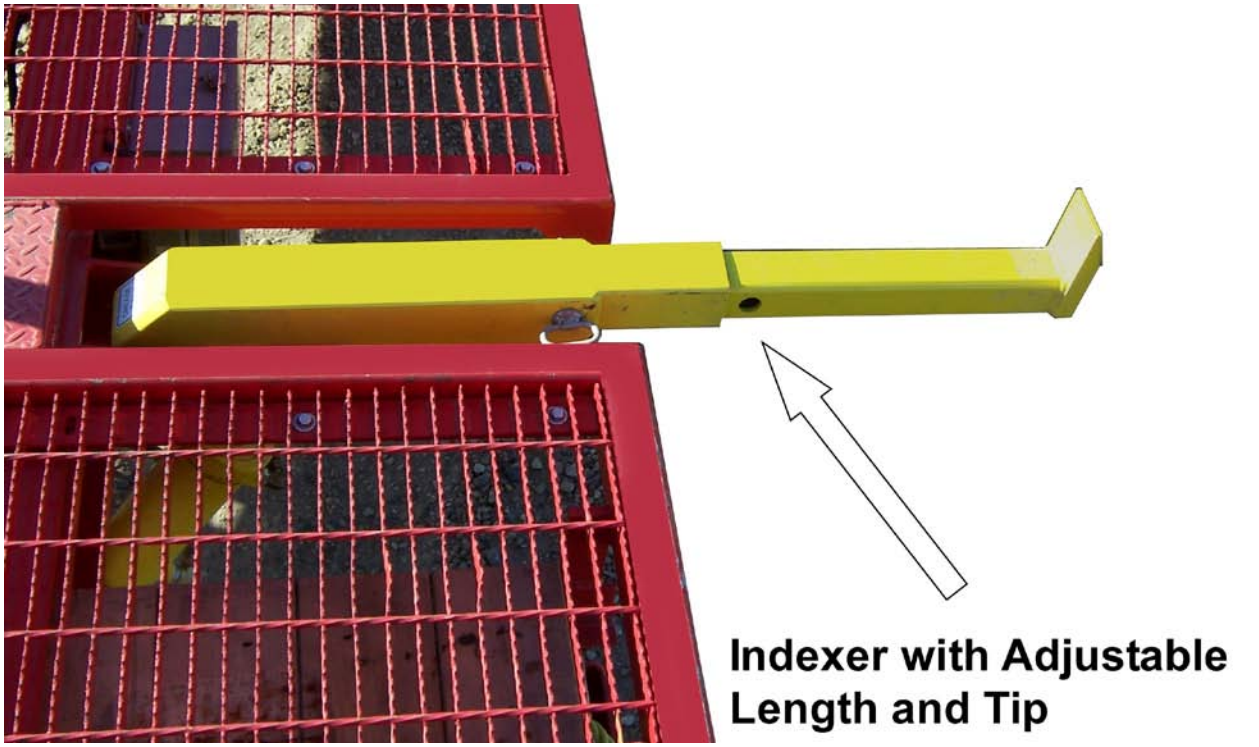
Indexers

Each Little Tripper is fitted with six side indexers (three left and three right). The two indexers located at the rear of the unit must not be operated at the same time. Determine which indexer will work best for the handling operation, move selector to the set to be used and that will close the flow of hydraulic oil to the set that is not required. Now only the front indexer and one or the other of the rear indexers will function. The indexers are capable of picking up and laying down Tubulars from an 18” pipe rack or from a tiered 42” pipe rack.

Pick-Up Arms

The Pick-up Arms that come attached to the side of the Catwalk. Fit into the Indexers that are to be used, set length of arm to safely pick up or lay down pipe and set pin.

Important
Both Pick-up Arm pin holes in Indexers must be the same to insure even roll on and off.



Indexer with Adjustable Length and Tip

Remote Control

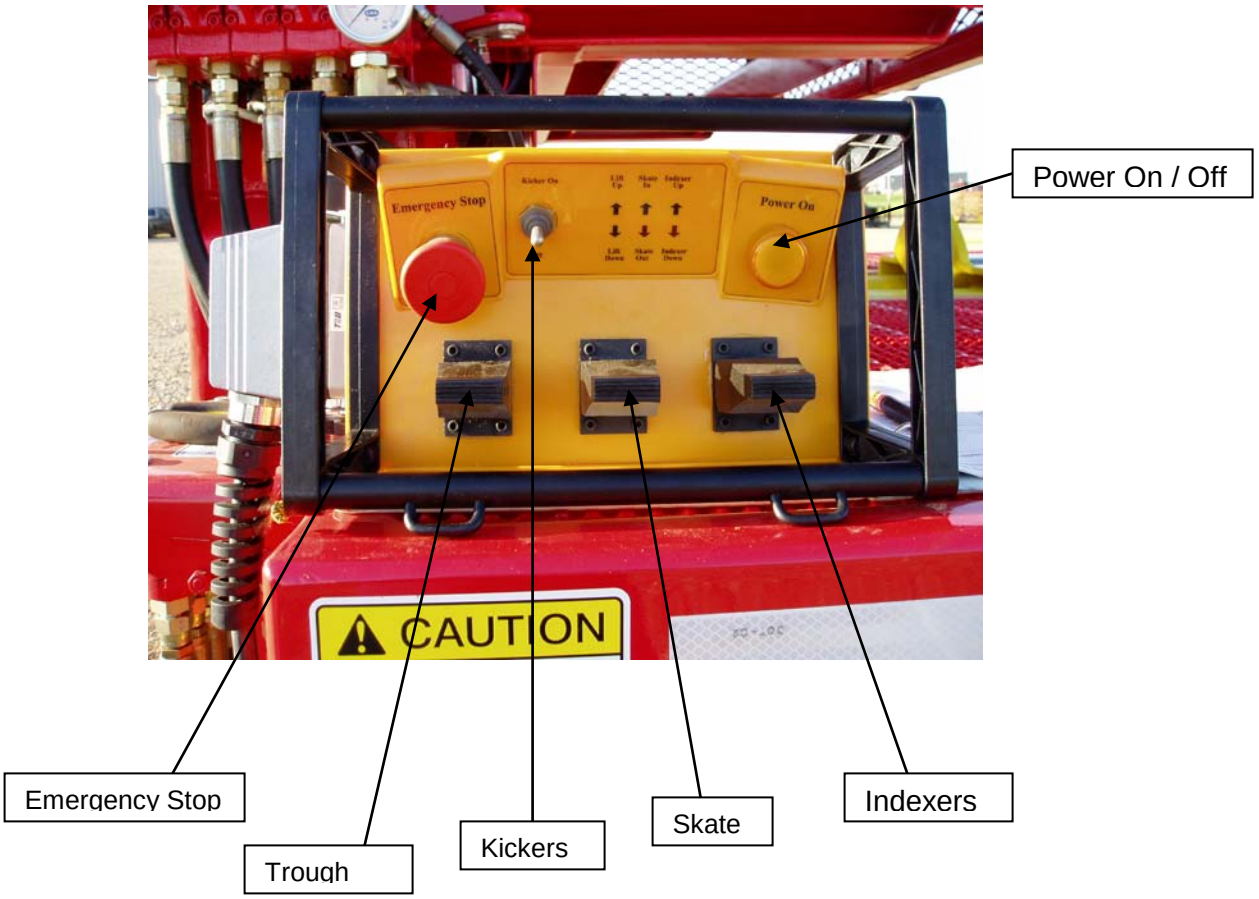
The Remote Control gives the operator a wide view of the working unit. The operator may now also work around the unit which means no blind spots.

The Remote Control can be found in the tool box, in its own Pelican Box. When not in use keep Remote in Pelican Box. Remote comes with 20 feet of cord that plugs into one of two ports.

First port: In front of tool box
Second Port: Same side inside back skirt.

Plug in: Male to Female snap clip.

Plug in for Remote (Front)


Power On / Off
Emergency Stop
Trough
Kickers
Skate
Indexers
Emergency Stop
Power On
CAUTION

Starting and Operating

Picking Up Tubular

- Lift tubular into Trough with indexers.
- Bring Skate up against tubular product
- Lift Trough feathering hydraulic controls at start for smooth operation
- Feather Trough again coming to the end of its stroke
- Using Skate push tubular product towards the end of the Trough to desire location for the elevator to pick up
- Rig picks up tubular product out of Trough into Derrick and it is now safe to lower Trough. While lowering Trough feathering in reverse order. Move Skate back to pick up position.

Laying Down Tubular Using the Skate

- Run Trough up – feathering controls
- Run Skate to top of Trough, place tubular product into Trough and start lowering tubular product.
- Rig Operator lowers tubular product into Trough while Catwalk operator brings tubular product to back of Trough with the Skate.
- Bring Trough down. Feathering control. When Trough is in the down position, move Skate back, clear from tubular product and kick tubular product out to driller or off driller's side.

Laying Down Tubular Without the Skate

- Run Trough up – feathering controls
- Place tubular product into Trough and start lowering tubular product.
- Rig Operator lowers tubular product into Trough while gravity brings tubular product to back of Trough.
- Bring Trough down. Feathering control. When Trough is in the down position, ensure Skate is clear from tubular product and kick tubular product out to driller or off driller's side.

Care and Scheduled Maintenance

Hydraulic Fluids

Definition

Hydraulic fluids are a large group of liquids made of many kinds of chemicals. They are used in automobile automatic transmissions, brakes, and power steering; fork lift trucks, tractors, bulldozers, industrial machinery, and airplanes to name a few. The three most common types of hydraulic fluids are mineral oil, organophosphate ester, and polyalphaolefin. Some of the trade names for hydraulic fluids include Durad®, Fyrquel®, Skydrol®, Houghton-Safe®, Pydraul®, Reofos®, Reolube®, and Quintolubric®. (Use of trade names is for identification only)

Some Hydraulic Fluids have a bland, oily smell and others have no smell; some will burn and some will not. Certain Hydraulic fluids are produced from crude oil and others are manufactured.

Environmental Hazards

Hydraulic fluids can enter the environment from spills, leaks in machines that use them or from storage areas and waste sites. If spilled on soil, some of the ingredients in hydraulic fluids will stay on top and others will sink into the groundwater. In water, some hydraulic fluids' ingredients will transfer to the bottom and can stay there for more than a year. Certain chemicals in hydraulic fluids may break down in air, soil or water, but how much break down isn't known.

Exposed to Hydraulic Fluids

Little is know about how hydraulic fluids can affect your health. Since hydraulic fluids are actually mixtures of chemicals, some of the effects seen may be caused by additives in the hydraulic fluids. In people, the effects of breathing air with high levels of hydraulic fluids are not known. Drinking large amounts of some types of hydraulic fluids can cause pneumonia, intestinal bleeding, or death in humans (no reports on humans). Weakness of the hands was seen in a worker who touched a lot of hydraulic fluids. It is not known whether hydraulic fluids can cause birth defects or reproductive effects.

The Occupational Health and Safety Administration (OHSA) have set an exposure limit of 2000 milligrams per cubic meter (mg/m^3) petroleum distillates for 8 hour work days, 40 hour work week. The National Institute for Occupational Safety and Health (NIOSH) recommends an exposure limit of 350 mg/m^3 petroleum distillates for 10 hour workdays, 40 hour work week.

Battery

WARNING

The battery emits hydrogen which, when mixed with oxygen in the air, forms the highly explosive gas, ox hydrogen. The electrolyte in the battery is diluted sulphuric acid and therefore highly corrosive. Should the liquid come into contact with eyes, skin or clothes wash immediately with plenty of water. In the event of contact with the eyes, after washing contact a doctor immediately.

Never reverse the polarity of the battery!!

If the battery leads are connected to the wrong terminals or either of the battery or alternator leads is disconnected while the engine is running, the alternator may be irreparably damaged. Always make sure that you connect the red positive (+) lead to the positive (+) battery terminal and the blue negative (-) lead to the negative (-) battery terminal. Always disconnect the positive battery lead before connecting a battery charger to boost the battery.

WARNING

Use of booster batteries or booster generators producing more than 15 volts may cause immediate and irreparable damage to the electric components in the power pack.

Jump starting using booster cables

To avoid arcing or flashover that can seriously damage the unit's electrical components, booster cables must be connected correctly. Switch off the ignition in the faulty unit. Switch off the engine in the donor unit. Start by connecting the positive (+) terminal of the donor battery to the positive (+) terminal of the flat battery. Next connect the negative (-) terminal of the donor battery to the engine mounting of the faulty unit. Start the donor engine and then start the engine in the faulty unit. Let it run for a while before disconnecting the booster cables in the reverse order.

Rust Prevention

What causes Rust?

Steel body panels of the unit are subject to rusting whenever air and moisture manage to penetrate the protective finish, and panels may rust through if the process is unchecked. Rusting can occur whenever water is trapped or where the unit's panels are continuously damp.

Damage to paint by scraping or other minor accidents immediately exposes metal to air and moisture.

Industrial pollution may also damage paint and promote rusting.

Preventive Maintenance

The following procedures are necessary to help protect against rusting**.** Wash unit regularly. Inspect unit for damage and arrange for repairs promptly. Major body damage should be repaired immediately and new panels or exposed area should be coated with anticorrosion material.

Touching up Paintwork

Damaged paintwork should be treated as soon as it is discovered; the sooner it is treated the less will be the risk of corrosion starting. Contact a Pipe Wranglers representative for the original paint code for your specific unit.

Maintenance Schedule

The Maintenance Schedule prescribes a program of instruction to the purchaser/operator of a Little Tripper Hydraulic Catwalk for maintenance which is reasonable and necessary to ensure the proper function, durability, and safety of the Little Tripper Hydraulic Catwalk in normal use.

IMPORTANT!
It is strongly recommended and advisable to retain receipt and if possible copies of work order for all service and repair work, wherever performed.

Maintenance Procedure

1. Any unsafe conditions disclosed by the inspection requirements of this section shall be corrected before operation of the Little Tripper Hydraulic Catwalk is resumed. Adjustments and repairs shall be done only by designated personnel.
2. After adjustments and repairs have been made the Catwalk shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

Conducting Safety Checks and Maintenance

When checking or lubricating the Hydraulic Catwalk, install the Trough's locking device and shut down engine. When servicing is performed by two or more people; take care to perform all work safely. Replace hoses every three years whether they are damaged or not. They are made of rubber and are aged gradually and sometimes prematurely.

Pre Operation Check

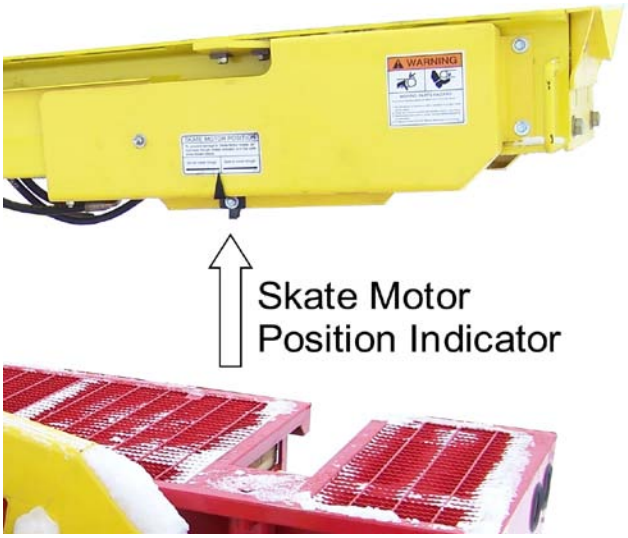
There are two types of "Pre Operation Checks"

1. **Daily walk around check**.
    a. It is suggested that a walk around is performed and the Catwalk is visually inspected on a Daily basis.
    b. This will be a simple visual inspection. The person performing the inspection should look for wear and tear on moving parts like bushings, cam followers, Trough, chaffing and wear on hydraulic lines, cylinders, overall condition of welds, structural components and condition of all electrical parts.
    c. Check all fluid levels (coolant, hydraulic and engine oil, fuels, etc)
2. **Pre Operation Check List**
    a. This checklist should be completed periodically and before starting any new job.
    b. Inspection sheets **must** be filled out once a month or after every 250 hours of use. (Checklist on back of manual)
    c. Failure to produce inspection sheets for repair **will** void warranty
    d. It is recommended that a copy of the inspection report be forwarded to Pipe Wranglers via fax (403) 342-6613 to insure full warranty.

Skate Motor Maintenance

If applicable your Little Tripper may contain a Skate Motor Position Indicator located on the off Driller Side of the Trough near the Skate Motor. The Skate Motor Position Indicator's purpose is to prevent possible damage to hydraulic fittings and hoses by lowering the Trough after Skate Motor maintenance.

After any Skate Chain or Skate Motor maintenance has been completed do not lower the Trough without first reading the indication provided by the Skate Motor Position Indicator (pictured below)



Engine Troubleshooting

See KUBOTA Manual enclosed.

Inspection

Initial Inspection

Prior to initial use all new and altered Little Tripper Hydraulic Catwalk shall be inspected to insure compliance with provisions of these standards.

Inspection Classification

1. **Regular Inspection**. Inspection procedure for Little Tripper Hydraulic Catwalk in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the Little Tripper and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as “frequent” and “periodic” with respective intervals between inspections as defined below:

    a. Frequent inspection: Daily or before starting a new job.
    b. Periodic: Once a month or 250 hrs of operation to maintain warranty

2. **Inspection Records**: Written, dated, and signed inspection reports and records shall be made monthly on critical items in use such as brakes, cylinders, valves, hoses, Trough, indexers and Skate. Records shall be kept readily available.

Specification

SPECIFICATIONS

GENERAL	
Weight	21160 lbs +/-
Hitch Type	5th Wheel Pintle Hitch Optional
Maximum Length	46’ – 10”
Deck Length	39’-2”
Transport Height	42” (Deck height)
Maximum Height (Jacks fully extended)	59”
Catwalk Tubular indexers	Able to reach down to 18”
Fuel Gauge	Glow plug starting aide, light switch
Block Heater	
Operator’s Controls	Manual Proportional Valve Bank located front of the Catwalk
Maximum Lifting Capacity	3600lbs
TROUGH	
Trough Length	39’-6 ½”
Trough cycle time	25 sec @ 2000 RPM
cycle up	15 sec @ 2000 RPM
cycle down	10 sec @ 2000 RPM
Trough Style	32.5 degree “V” c/w 9ft bolt on Trough extension for casing
Tubular Trough Kickers	Hydraulically operated: 2 left, 2 right
Maximum Lifting Capacity	3,600 lbs
Adjustable Trough Heights	Capable of reaching from 9ft – 23ft or 27ft w extension
ADJUSTABLE TROUGH HEIGHTS	
ADJUSTMENT #1	
End of Trough height	281” or 23.42ft
Sub. height	
ADJUSTMENT #2	
End of Trough height	254” or 21.17ft
Sub. height	
ADJUSTMENT #3	
End of Trough height	229” or 19.08ft
Sub. height	
ADJUSTMENT #4	
End of Trough height	205” or 17.08ft
Sub. height	
ADJUSTMENT #5	
End of Trough height	183” or 15.25ft
Sub. height	

ADJUSTMENT #6	
End of Trough height	163” or 13.58ft
Sub. height	
ADJUSTMENT #7	
End of Trough height	144” or 12ft
Sub. height	
ADJUSTMENT #8	
End of Trough height	126” or 10.50ft
Sub height	
ADJUSTMENT #9	
End of Trough height	109” or 9.08ft
Sub height	
JACKS	
Stabilizing/Leveling/Tiering Jacks	4 hydraulic cylinder jacks
	12 inch stroke plus 18 inch manually pinned
	Each jack independently operated for precise leveling
	Each jack fitted with independent Hydraulic lock (Man. operated)
Bore:	2 1/2"
Stroke:	12"
HYDRAULICS	
Hydraulic Filters	MF1003-P10NB
Pump	45 Series Sauer-Danfoss Piston
Valve Bank	DANFOSS PV 32 VALVE/PRINCE 4 BANK VALVE
PSI Max	3000 psi
Maximum Flow	15 gal per min @ 2000 RPM
Type of oil	Telus T32
TANK	45 US gal
Main Arm Cylinder	
Bore	5”
Stroke	46 1 1/32”
SKATE	
Gear Box	R500 SUPERIOR
Motor Type	Charlynn
Chain Type	OCM 60H
ENGINE	Kubota Model #V1903
Manually operated Air Shutoff	Roda-Deaco
Engine	Kubota 1903 c/w Radiator
Fuel Type	Diesel
Horsepower	32 HP @ 2400 RPM

Fuel Capacity	25 US gal
LIGHTS	
Brake/Signal	4” LED
Emergency/Side/ Rear/ Front	2.5” LED
TRAILER	
Emergency Brake away	Tekonsha 2009 73
Main Plug	7 Pin, RV
Tire size	235 85R 16 10 Ply
Tire Pressure	65 PSI
Tire configuration	Tandem Axle, Dual Wheel
Mud Flaps	24” x 30”
Foot Pads	22" x 22” x 4 ½”
FULL LENGTH TROUGH SKATE	
Cycle Time up	9 sec
Cycle Time Back	9 sec

Index

Little Tripper Spare Parts List

Parts #	Description	Quantity
171061	Roller Chain	20
183010	Lamp	2
183011	Lamp	2
183020	Lamp	1
189001	Grease Zerk	10
189008	Grease Zerk	10
189009	Grease Zerk	10
252101	Lynch Pin	10
350613	Idler	3
540002	Cam Follower	2
540003	Yoke Roller	8
540006	Roller Link	4
540007	Connector Link	4
540019	Work Light	1
540093	Hydraulic Filter	2
540112	Fuel Filter	2
540113	Air Filter	2
540114	Oil Filter	2
PHA 028	Ball Weld	2
PHA 072	Pin Retainer	2
PHA 081	Pin	4
PHA 083	Pin	4
PHA 152	Chain Guide	6
PHA 153	Chain Guide	6
PHA 164	Idler	2
PHA 181	Pin	4
PHA 213	Pin	4
PHA 237	Indexer Master Cylinder	2
PHA 240	Indexer Slave Cylinder	2
PHA 242	Kicker Cylinder	2
PHA 244	Outrigger Cylinder	1
WSK 442	Seal Kit	1
WSK 452	Seal Kit	1
WSK 462	Seal Kit	1
WSK 463	Seal Kit	1
C04R3388	Remote Cable	1

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