

Technical Manual

INCLUDING:

Safety Manual
Operation Manual
Maintenance Manual
Storage Instructions

FOR:

Assembly Number	Description
10393600-0001	3.600in Roller Bogie Dropbar

Important Notes

All of the equipment referred to in this technical manual is designed and manufactured by Wireline Engineering Ltd in Scotland, UK. Wireline International LLC is a wholly owned subsidiary of Wireline Engineering Ltd

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Symbols

The following symbols are used throughout the manual to highlight particular levels of hazard associated with an operation.



A danger symbol highlights a hazard with potential risk of life-threatening injury or death of personnel.



A warning symbol highlights a hazard with potential risk of physical harm to personnel.



A caution symbol highlights a hazard with potential risk of damage to or loss of equipment, software, data or environment.



An information symbol highlights information that requires special attention.



A hint symbol highlights a tip or hint which will help improve a procedural step.

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1 General Information

1.1 Introduction

Wireline Engineering has developed a unique advanced roller technology and has engineered this into a series of innovative and functionally diverse conveyance products that allow intervention tool-strings to be run with virtually no frictional drag.

Installed strategically at critical points in the tool-string, Advanced Roller Systems lift and eliminate friction between the toolstring and the tubing surface.

Advanced Roller Systems from Wireline Engineering / Wireline International have become established in the international oil & gas community as the preferred means of transferring wireline or coiled tubing tool-strings to the required depth in deviated and tortuous well-bores.

With an extensive track record spanning six continents, successful operations have been performed at inclinations up to 86° and at depths below 24500ft (7470m).

The designs have also been developed to enable through-connection of hydraulic, electrical or ballistic control signals, allowing complete flexibility for integration and optimum positioning of the Advanced Roller Systems in the toolstring.

1.2 ROLLER BOGIE™ Dropbar Tool

This style of Dropbar is based around Patented Roller Bogie technology and is designed specifically for use in highly deviated and long reach well bores.

The Roller Bogie Dropbar must be dropped independently once the Roller Bogie Cutter is at depth and is designed to strike out on top of the cutter to activate the cutting and clamping mechanisms.

The same Dropbar is capable of being used with 5/16" cable to .092" wire by exchanging some internal components.

Other features include a quick and safe method of attachment to the cable or wire at surface.

It must be noted that the Roller Bogie Dropbar is designed specifically for use with the Roller Bogie Cutter. Wireline Engineering Ltd cannot guarantee system effectiveness if dropped in conjunction with any other Cutter make or model.

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2 Safety Manual

2.1 General Safety

SAFETY IS EVERYONE'S RESPONSIBILITY

This section of the manual highlights the residual hazards (associated with the ROLLER BOGIE™ tools) that have been identified at the design stage.

Planning (e.g. risk assessment) must be undertaken prior to any operation involving a ROLLER BOGIE™ tool in order to minimise (as far as is reasonably practical) the risks associated with these residual hazards.

This manual is not a substitute for local or national legal requirements in the region where the ROLLER BOGIE™ tool is to be used, or additional procedural requirements of the end user. These must be dealt with locally during the job planning stage.

PLAN – THINK HSE IN ADVANCE

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2.2 Residual Hazards – transportation and storage

2.2.1 Residual Hazard – Heavy equipment



ROLLER BOGIE™ tools can be very heavy. The weight of the ROLLER BOGIE™ tool is shown on the assembly drawing (see section 7). Do not manually handle the ROLLER BOGIE™ tool unless it is unavoidable. Only manually handle the ROLLER BOGIE™ tool if you have been trained in safe manual handling practices. If the ROLLER BOGIE™ tool is too heavy for safe manual handling, use a mechanical lifting device.

Potential Loss: Personal injury

2.2.2 Residual Hazard – Inadequate restraint during storage



Always store the ROLLER BOGIE™ tool either in a suitable container, or suitably restrained. Failure to do so could result in the ROLLER BOGIE™ tool rolling from its storage position and causing damage or personal injury.

Potential Loss: Personal injury / Equipment damage / Equipment Loss

2.2.3 Residual Hazard – Inadequate preparation for storage



Regardless of the expected duration of storage, always carry out appropriate maintenance (see section 4.2.2) before putting the ROLLER BOGIE™ tool into storage. Failure to do so could result in corrosion of parts and subsequent reduced performance of the ROLLER BOGIE™ tool.

Potential Loss: Equipment damage / Poor performance

2.2.4 Residual Hazard – Inappropriate storage conditions



Regardless of the expected duration of storage, always store the ROLLER BOGIE™ tool in a suitable environment indoors and protected from extremes of temperature and humidity. Failure to do so could result in corrosion of parts and subsequent reduced performance of the ROLLER BOGIE™ tool.

Potential Loss: Equipment damage / Poor performance

2.2.5 Residual Hazard – Inadequate preparation for transportation



Bearing in mind the expected duration and mode of transport, always transport the ROLLER BOGIE™ tool either in a suitable container or suitably restrained / protected. Failure to do so could result in contamination / corrosion of or vibration damage to parts and subsequent reduced performance of the ROLLER BOGIE™ tool.

If the tool has been in field use, ensure that the tool has been examined and serviced in accordance with section 4.2.2 before transportation.

Potential Loss: Equipment damage / Poor performance / Regulation breach

2.2.6 Residual Hazard – potentially hazardous substances



ROLLER BOGIE™ tools require the use of potentially hazardous substances. Material Safety Data Sheets are included in section 8. These substances must be handled, stored and transported in accordance with the appropriate countries' regulations.

Potential Loss: Personal injury / Environmental Damage

2.2.7 Residual Hazard – Inadequate Personal Protective Equipment (PPE)



Appropriate PPE must be worn during all ROLLER BOGIE™ operations. The level of PPE required must be determined locally during job planning.

Potential Loss: Personal injury

2.2.8 Residual Hazard – Sharp Edges and Pinch Points



In addition to the use of appropriate PPE, personnel must familiarise themselves with the potential pinch points and potentially sharp edges on the ROLLER BOGIE™ tool.

Potential Loss: Personal injury

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2.3 Residual Hazards – Field Use

2.3.1 Residual Hazard – Heavy equipment



ROLLER BOGIE™ tools can be very heavy. The weight of the ROLLER BOGIE™ tool is shown on the assembly drawing (see section 7). Do not manually handle the ROLLER BOGIE™ tool unless it is unavoidable. Only manually handle the ROLLER BOGIE™ tool if you have been trained in safe manual handling practices. If the ROLLER BOGIE™ tool is too heavy for safe manual handling, use a mechanical lifting device.

Potential Loss: Personal injury

2.3.2 Residual Hazard – Inadequate restraint during field use



Always ensure that the ROLLER BOGIE™ tool is effectively restrained and is not left unattended on its wheels on an inappropriate surface. Failure to do so could result in the ROLLER BOGIE™ tool rolling uncontrolled from the position in which it was left and causing damage or personal injury. This is a particular hazard on floating vessels.

Potential Loss: Serious personal injury / Equipment damage / Equipment loss

2.3.3 Residual Hazard – Inadequate preparation for use



Regular maintenance of the ROLLER BOGIE™ tool is critical to its continued safe / reliable operation. Before releasing a ROLLER BOGIE™ tool for field use, ensure that it has been maintained correctly (see section 4) and is in a suitable condition for use. Failure to do so could result in reduced performance or failure of the ROLLER BOGIE™ tool.

Potential Loss: Equipment damage / Poor performance / Premature wear or tool failure

2.3.4 Residual Hazard – Incorrect tool selection or placement



Ensure that the most suitable ROLLER BOGIE™ tool is selected for the job being planned. In case of doubt, contact Wireline Engineering for technical help.

Potential Loss: Equipment damage / Poor performance

2.3.5 Residual Hazard – potentially hazardous substances



ROLLER BOGIE™ tools require the use of potentially hazardous substances. Material Safety Data Sheets are included in section 8. These substances must be handled, stored and transported in accordance with the appropriate country's regulations.

Potential Loss: Personal injury / Environmental Damage

2.3.6 Residual Hazard – Inadequate Personal Protective Equipment (PPE)



Appropriate PPE must be worn during all ROLLER BOGIE™ operations. The level of PPE required must be determined locally during job planning.

Potential Loss: Personal injury

2.3.7 Residual Hazard – Sharp Edges and Pinch Points



In addition to the use of appropriate PPE, personnel must familiarise themselves with the potential pinch points and potentially sharp edges on the ROLLER BOGIE™ tool.

Potential Loss: Personal injury

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2.3.8 Residual Hazard – Use of damaged ROLLER BOGIE™ tool



If the ROLLER BOGIE™ tool has been exposed to an exceptional event (e.g. exposure to aggressive well fluids), or overload (e.g. during a fishing operation) or other damage, it is essential that the ROLLER BOGIE™ tool is examined to determine whether the exposure has been detrimental. Where damage is found, this must be rectified before further use of the ROLLER BOGIE™ tool.

Potential Loss: Personal injury / Poor performance / Premature wear or tool failure

2.3.9 Residual Hazard – Unauthorised Modification of the ROLLER BOGIE™ tool



The ROLLER BOGIE™ tool must not be modified in any way without prior approval from Wireline Engineering Department. Any unauthorised modification discovered must be rectified before proceeding with use.

Potential Loss: Personal injury / Poor performance / Premature wear or tool failure

2.3.10 Residual Hazard – Inadequate toolstring make-up



Connection of the ROLLER BOGIE™ tool to the toolstring (torque application method and torque value) must be made in accordance with the requirements of the party responsible for the toolstring e.g. the service company. Failure to do so could result in the ROLLER BOGIE™ tool becoming detached from the toolstring.

Potential Loss: Serious personal injury / Equipment damage / Equipment Loss

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2.4 Residual Hazards – Maintenance

2.4.1 Residual Hazard – Heavy equipment



ROLLER BOGIE™ tools can be very heavy. The weight of the ROLLER BOGIE™ tool is shown on the assembly drawing (see section 7). Do not manually handle the ROLLER BOGIE™ tool unless it is unavoidable. Only manually handle the ROLLER BOGIE™ tool if you have been trained in safe manual handling practices. If the ROLLER BOGIE™ tool is too heavy for safe manual handling, use a mechanical lifting device.

Potential Loss: Personal injury

2.4.2 Residual Hazard – Inadequate restraint during maintenance



Always ensure that the ROLLER BOGIE™ tool is effectively restrained and is not left unattended on its wheels on an inappropriate surface. Failure to do so could result in the ROLLER BOGIE™ tool rolling uncontrolled from the position in which it was left and causing damage or personal injury. This is a particular hazard on floating vessels.

Potential Loss: Serious personal injury / Equipment damage / Equipment loss

2.4.3 Residual Hazard – Use of non-genuine spares / consumables



Only use genuine ROLLER BOGIE™ spare parts purchased directly from Wireline Engineering / Wireline International. Failure to do so could result in reduced performance or failure of the ROLLER BOGIE™ tool.

Potential Loss: Equipment damage / Poor performance / Premature wear or tool failure

2.4.4 Residual Hazard – Incorrect disassembly / reassembly



Always follow the disassembly / reassembly instructions carefully (see section 5). Always validate reassembly by testing the reassembled ROLLER BOGIE™ tool (see section 4)

Potential Loss: Equipment damage / Poor performance

2.4.5 Residual Hazard – Potentially hazardous substances



ROLLER BOGIE™ tools require the use of potentially hazardous substances. Material Safety Data Sheets are included in section 8. These substances must be handled, stored and transported in accordance with the appropriate country's regulations.

Potential Loss: Personal injury / Environmental Damage

2.4.6 Residual Hazard – Inadequate Personal Protective Equipment (PPE)



Appropriate PPE must be worn during all ROLLER BOGIE™ operations. The level of PPE required must be determined locally during job planning.

Potential Loss: Personal injury

2.4.7 Residual Hazard – Sharp Edges and Pinch Points



In addition to the use of appropriate PPE, personnel must familiarise themselves with the potential pinch points and potentially sharp edges on the ROLLER BOGIE™ tool.

Potential Loss: Personal injury

2.4.8 Residual Hazard – Unauthorised Modification of the ROLLER BOGIE™ tool



The ROLLER BOGIE™ tool must not be modified in any way without prior approval from Wireline Engineering Engineering Department. Unauthorised modifications discovered during maintenance must be rectified before releasing the ROLLER BOGIE™ tool for field service.

Potential Loss: Personal injury / Poor performance / Premature wear or tool failure

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3 Operation Manual

3.1 Operating Procedure for ROLLER BOGIE™ Dropbar tools



Before proceeding with any ROLLER BOGIE™ tool operations ensure that provision has been made to minimise the risks associated with the residual hazards detailed in section 2.2

ASSEMBLY ONTO WIRE.

NOTE:-

ENSURE CORRECT PARTS USED TO SUIT WIRE SIZE.

REFER TO DRAWING 10393600-0001 FOR DETAILS.

1. Unscrew Retainer Screw (14) from Bottom Sub (11).
2. Unscrew Socket Head Cap Screw (16) from Bottom Sub (11).
3. Insert Roller Bogie Key into slot in Bottom Body (1) and hold in position and unscrew Bottom Sub (11) from Bottom Body (1), ensure slot in Bottom Sub (11) is in-line with Bottom Body (1).
4. Unscrew Socket Head Cap Screw (16) from Top Sub (12).
5. Insert Roller Bogie Key into slot in Top Body (1) and hold in position and unscrew Top Sub (11) from Top Body (1), ensure slot in Top Sub (12) is in-line with Bottom Body (1).
6. Unscrew Retainer Screw (13) from Rotating Sleeve (10) and slide into upper position allowing slot in Rotating Sleeve (10) in-line with slot in Top Body (1), Bottom Body (1) and Spacer (4).
Note:- Retainer Screw (13) cannot be removed from the tool.
7. Repeat step (6) for the remaining Rotating Sleeves (10) in Bottom Body (1) and Spacer (4).
8. Make-up wire to slots in tool
9. Rotate all Rotating Sleeves (10) 90° and tighten Retainer Screw (13) to hold Rotating Sleeve (10) in position.
10. Insert Top Sub (12) fully into Top Body (1), ensure slot is offset 90° to slot in Top Body (1).
11. Insert Socket Head Cap Screw (16) and secure Top Sub (12) in position.
12. Insert Bottom Sub (11) fully into Bottom Body (1), ensure slot is offset 90° to slot in Bottom Body (1).
13. Insert Socket Head Cap Screw (16) and secure Bottom Sub (11) in position.

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DIS-ASSEMBLY FROM WIRE

1. Unscrew Retainer Screw (14) from Bottom Sub (11).
2. Unscrew Socket Head Cap Screw (16) from Bottom Sub (11).
3. Insert Roller Bogie Key into slot in Bottom Body (1) and hold in position and unscrew Bottom Sub (11) from Bottom Body (1), ensure slot in Bottom Sub (11) is in-line with Bottom Body (1).
4. Unscrew Socket Head Cap Screw (16) from Top Sub (12).
5. Insert Roller Bogie Key into slot in Top Body (1) and hold in position and unscrew Top Sub (11) from Top Body (1), ensure slot in Top Sub (12) is in-line with Bottom Body (1).
6. Unscrew Retainer Screw (13) from Rotating Sleeve (10) and slide into upper position allowing slot in Rotating Sleeve (10) in-line with slot in Top (1), Bottom Body (1) and Spacer (4).

Note:- Retainer Screw (13) cannot be removed from the tool.

7. Rotate all Rotating Sleeves (10) 90°.
8. Remove wire from slots in tool.

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4 Maintenance Manual

4.1 General Maintenance Guidelines



Before proceeding with any ROLLER BOGIE™ tool maintenance ensure that provision has been made to minimise the risks associated with the residual hazards detailed in section 2.3

Regular maintenance is critical to the continued safe and reliable operation of ROLLER BOGIE™ tools. It is recommended that systems are put in place to control and record the correct periodic maintenance of ROLLER BOGIE™ products.



Application of grease is a critical part of ROLLER BOGIE™ maintenance. It is required both for lubrication, and for the exclusion of wellbore contaminants from the ROLLER BOGIE™ tool.

Ensure that suitable grease is used (see section 4.4 for Wireline Engineering recommended greases).

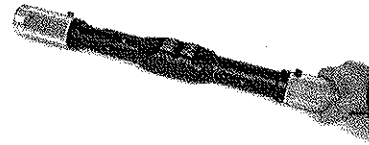
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4.2 Routine Maintenance Service

4.2.1 Routine Maintenance Service Frequency

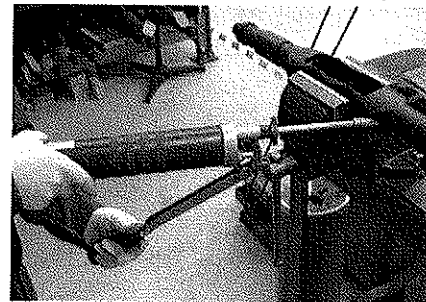
A routine service should be carried out at the following times:

- Prior to placing the ROLLER BOGIE™ tool into storage.
- Prior to packing the ROLLER BOGIE™ tool for transportation.
- Prior to connecting the ROLLER BOGIE™ tool to the toolstring for running in hole.
- At any other time as deemed necessary by the owner / user e.g. when the current condition of a ROLLER BOGIE™ tool is unknown.



4.2.2 Routine Maintenance Service Procedure (for all ROLLER BOGIE™ Tool Types)

1. Carry out a thorough visual examination of the ROLLER BOGIE™ tool. This examination should determine whether the ROLLER BOGIE™ tool is fit for purpose. Partial or complete disassembly may be required to the extent deemed necessary to complete the thorough examination. The examination must include:
 - An assessment of the condition of the upper and lower end connections fitted to the ROLLER BOGIE™ tool.
 - An assessment of the level of wear of the ROLLER BOGIE™ components.
 - An assessment of the level of corrosion of the ROLLER BOGIE™ components.
1. Repair or replace any components found to be inadequate during the thorough visual examination (section 5 details the procedures for disassembly and reassembly required to replace parts). Only use genuine spare parts procured through Wireline Engineering Ltd or Wireline International LLC. Redress Kit 10393600-5001 contain all consumable items required to overhaul this ROLLER BOGIE™ tool.
2. Use the grease gun to inject grease (photo). There is one port per roller and one or two ports per body. Approximately 3-5 strokes are likely to be required per port; excess will exit from the opposite side. (see section 4.4 for suitable greases)



4.2.3 Validation Following a Routine Maintenance Service



Rollers and swivel may lock up initially after greasing and need to be manipulated until they rotate freely.

After completion of the routine maintenance service, the ROLLER BOGIE™ tool must be tested to ensure that it functions correctly:

1. Rotate the upper swivel to ensure that it rotates freely.
2. Lay the assembly on a flat workbench and roll back and forth to ensure that all rollers rotate freely (photo).

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4.3 Major Maintenance Service

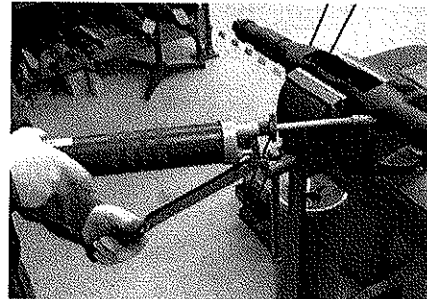
4.3.1 Major Maintenance Service Frequency

A major maintenance service should be carried out at the following times:

- Following retrieval of a ROLLER BOGIE™ tool from a run in hole.
- Following an extended period of storage of the ROLLER BOGIE™ tool.
- When inferior performance or condition of the ROLLER BOGIE™ tool has been observed.
- Following an exceptional event (e.g. exposure to aggressive well fluids, or following overload – during fishing for example)
- At any other time as deemed necessary by the owner / user e.g. when the current condition of a ROLLER BOGIE™ tool is unknown and there is doubt about its performance.

4.3.2 Major Maintenance Service Procedure

2. Follow the procedure in section 5 to disassemble the ROLLER BOGIE™ tool.
3. Carry out a thorough visual examination of all of the ROLLER BOGIE™ tool components. The examination must include:
 - An assessment of the condition of the upper and lower end connections fitted to the ROLLER BOGIE™ tool.
 - An assessment of the condition of all of the internal threaded parts in the ROLLER BOGIE™ tool.
 - An assessment of the level of wear of the ROLLER BOGIE™ components.
 - An assessment of the level of corrosion of the ROLLER BOGIE™ components.
4. Repair or replace any components found to be inadequate during the thorough visual examination. Only use genuine spare parts procured through Wireline Engineering Ltd or Wireline International LLC. Redress Kit 10393600-5001 contain all consumable items required to overhaul this ROLLER BOGIE™ tool.
5. Follow the procedure in section 5 to reassemble the ROLLER BOGIE™ tool.
6. Use the grease gun to inject grease (photo). There is one port per roller and one or two ports per body. Approximately 3-5 strokes are likely to be required per port; excess will exit from the opposite side. (see section 4.4 for suitable greases)



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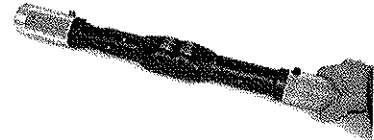
4.3.3 Validation Following a Major Maintenance Service



Rollers and swivels may lock up initially after greasing and need to be manipulated until they rotate freely.

After completion of the major maintenance service, the ROLLER BOGIE™ tool must be tested to ensure that it functions correctly:

1. Rotate the upper swivel to ensure that it rotates freely.
2. Lay the assembly on a flat workbench and roll back and forth to ensure that all rollers rotate freely (photo).



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4.4 Approved Grease Types



Application of grease is a critical part of ROLLER BOGIE™ maintenance. It is required both for lubrication, and for the exclusion of wellbore contaminants from the ROLLER BOGIE™ tool.

Ensure that suitable grease is used (see below).

4.4.1 Recommended grease for grease nipples & grease points

Wireline Engineering recommends the following high temperature grease for all ROLLER BOGIE™ tool grease nipples and grease holes, e.g. all rollers and swivels.

- **'Duron Foodmaster Clear 2'**

If an alternative grease must be used, ensure that it has equivalent or superior viscosity and high temperature performance characteristics to this recommended grease. 'Duron Foodmaster Clear 2' must be used for all ROLLER BOGIE™ tool operations within USA waters.

Other regions may also have regulatory requirements which influence the choice of grease. Ensure that the grease used satisfies local regulatory and company requirements.

4.4.2 Recommended grease for other areas of lubrication during assembly

When applying grease to areas not detailed in section 4.4.1, (e.g. grubs screws, O-ring & thread lubrication) Wireline Engineering recommends the following grease during assembly:

- **'Duron Multip 2'**



When assembling ROLLER BOGIE™ Dropbar tools, use a non-conductive grease type (refer to section 4.4.3) where there is a risk of contaminating electrical components.

4.4.3 Recommended grease for ROLLER BOGIE™ Dropbar parts

On monoconductor ROLLER BOGIE™ tools, Wireline Engineering Ltd recommends the following non-conductive grease for all connections, threads and O-rings that could potentially contaminate the electrical functioning of the tools:

- **'Lubriplate 930-A'**

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5 Disassembly & Assembly Instructions

Disassembly & Reassembly of a ROLLER BOGIE™ Dropbar Tool

The following section of the manual describes the disassembly and reassembly instructions for a ROLLER BOGIE™ Dropbar tool.

5.1.1 Tools Required

- 3/16" Short & Long Punch.
- 3/16" Allen Key.
- Screwdriver.
- Grease Nipple Driver.
- Grease Gun.
- O-Ring Extraction Tool.
- 2 Roller Bogie Keys.
- Bench vice with non-marking jaws.
- Adjustable Spanner

5.1.2 Disassembly of a ROLLER BOGIE™ Dropbar Tool



Throughout the following procedures, reference must be made to the relevant assembly drawing (see section 7)

5.1.2.1 Prior to Disassembly

Before starting disassembly, carry out a thorough visual examination of the ROLLER BOGIE™ tool. This examination should assess the general condition of the ROLLER BOGIE™ tool. The examination must include:

1. An assessment of the condition of the upper and lower end connections fitted to the ROLLER BOGIE™ tool.
2. A general assessment of the level of external wear of the ROLLER BOGIE™ components.
3. An assessment of the level of external corrosion of the ROLLER BOGIE™ components.
4. An assessment of whether there are any ROLLER BOGIE™ parts missing from the assembly.
5. An assessment of the functionality of the ROLLER BOGIE™ tool. Check the swivels at the upper and lower ends to assess whether they rotate freely and smoothly. Check the rollers to assess whether they rotate freely and smoothly. Check that the ROLLER BOGIE™ tool self rights and rolls onto its wheels from all orientations.

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5.1.2.2 ROLLER BOGIE™ Dropbar Tool Disassembly Procedure

1. Secure Dropbar Tool in vice ensuring vice straddles across Spacer (4), Rotating Pin Stop (3) and Top Body (1), ensure slot's for wire are facing upwards.
2. Remove Roll Pin (8) and (9) from Top Body (1).
 Note:- The following step requires (2 off) ROLLER BOGIE™ Keys to unscrew Roller Pin (6.1) from Roller Pin Retaining Head (6.2).
 Roller Pin (6.1) and Roller Pin Retaining Head (6.2) are matched pairs they are identified by etched letters; keep screwed together to maintain relationship.
3. Roller (5) should now be free to be removed from milled slot in Top Body (1).
4. Remove O-Rings (7) from Roller (5).
5. Repeat steps 2 to 4 for the disassembly of all Rollers (5) from Top Body (1) and Bottom Body (1).
6. Unscrew Retainer Screw (14) from Bottom Sub (11).
7. Unscrew Socket Head Cap Screw (16) from Bottom Sub (11).
8. Unscrew Bottom Sub (11) from Bottom Body (1).
9. Unscrew Retainer Screw (13) from Rotating Sleeve (10) and slide into upper position allowing the Retainer Screw (13) to be removed from Bottom Body (1).
10. Remove Rotating Sleeve (10) from Bottom Body (1).
11. Unscrew Socket Head Cap Screw (16) from Spacer (4).
12. Unscrew Bottom Body (1) from Spacer (4).
13. Unscrew Socket Head Cap Screw (16) from Top Sub (12).
14. Unscrew Top Sub (12) from Top Body (1).
15. Unscrew Retainer Screw (13) from Rotating Sleeve (10) and slide into upper position allowing the Retainer Screw (13) to be removed from Top Body (1).
16. Re-grip On Spacer (4).
17. Unscrew Socket Head Cap Screw (17) from Rotating Pin Stop (3).
18. Insert Roller Bogie Key into slot in Rotating Pin Stop (1) and hold in position and unscrew Top Body (1) from Rotating Pin Stop (1).
19. Unscrew Socket Head Set Screw (15) from Spacer (4).
20. Unscrew Rotating End Pin (2) and Rotating Pin Stop (3) from Spacer (4).
21. Unscrew Retainer Screw (13) from Rotating Sleeve (10) and slide into upper position allowing the Retainer Screw (13) to be removed from Spacer (4).
22. Remove Spacer (4) from vice.

The Roller Bogie Dropbar is now fully dis/assembled.

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5.1.2.3 Following Disassembly

After disassembly, carry out a thorough visual examination of the ROLLER BOGIE™ components. This examination should assess in detail the condition of the ROLLER BOGIE™ components. The examination must include:

1. An assessment of the condition of the upper and lower end connections fitted to the ROLLER BOGIE™ tool.
2. A general assessment of the level of internal wear of the ROLLER BOGIE™ components.
3. An assessment of the level of internal corrosion of the ROLLER BOGIE™ components.

Repair or replace components as deemed necessary. All O-rings and roll pins should be replaced after every disassembly.

5.1.3 Reassembly of a ROLLER BOGIE™ Dropbar Tool



Throughout the following procedures, reference must be made to the relevant assembly drawing (see section 7)

5.1.3.1 ROLLER BOGIE™ Dropbar Tool Reassembly Procedure



Use an evaporating cleaner suitable for electrical equipment on Wiring Kit items before assembly.



Use an appropriate high temperature grease sparingly on all internal connections and O-Rings (see section 4.4 for Wireline Engineering recommended greases).



Socket head set screws must be lightly greased before insertion, and tightened to a torque of 5.5 NM & 15 NM for 1/4" & 3/8" sizes respectively.

NOTE:-

ENSURE CORRECT PARTS USED TO SUIT WIRE SIZE.

REFER TO DRAWING 10393600-0001 FOR DETAILS.

1. Secure Spacer (4) in vice with slot for wire facing downwards.
2. Insert Rotating Sleeve (10) into Spacer (4) and ensure slot in Rotating Sleeve (10) and Spacer (4) are facing downwards
3. Insert Retainer Screw (13) into Rotating Sleeve (10) to secure in position.
4. Slide Rotating Pin Stop (3) over Rotating End Pin (2) and screw into Spacer (4) and ensure slot in Rotating Pin Stop (3), Rotating End Pin (2) and Spacer (4) are facing downwards
5. Secure Rotating Pin Stop (3) in position with Socket Head Set Screw (15).
6. Insert Roller Bogie Key into slot in Rotating Pin Stop (3) and hold in position and screw Top Body (1) onto Rotating Pin Stop (3) and ensure slot in Top Body (1) and Rotating Pin Stop (3) are facing downwards.
7. Insert Socket Head Cap Screw (17) into Rotating Pin Stop (3) to secure Top Body (1) in position.
8. Insert Rotating Sleeve (10) into Top Body (1) and ensure slot in Rotating Sleeve (10) and Top Body (1) are facing downwards
9. Insert Retainer Screw (13) into Rotating Sleeve (10) to secure in position.

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10. Insert Roller Bogie Key into slot in Top Body (1) and screw Top Sub (12) into Top Body (1) and ensure slot in Top Sub (12) is offset 90° to slot in Top Body (1).
11. Secure Top Sub (12) in position with Socket Head Cap Screw (16).
12. Screw Bottom Body (1) onto Spacer (4) and ensure slot in Spacer (4) and Bottom Body (1) are in-line.
13. Secure Bottom Body (1) in position with Socket Head Cap Screw (16).
14. Insert Rotating Sleeve (10) into Bottom Body (1) and ensure slot in Rotating Sleeve (10) and Bottom Body (1) are facing downwards
15. Insert Retainer Screw (13) into Rotating Sleeve (10) to secure in position.
16. Insert Roller Bogie Key into slot in Bottom Body (1) and screw Bottom Sub (11) into Bottom Body (1) and ensure slot in Bottom Sub (11) is offset 90° to slot in Bottom Body (1).
17. Secure Bottom Sub (11) in position with Socket Head Cap Screw (16).
18. Fit O-Rings (7) into Roller (5).
19. Insert Roller (5) into milled pocket in Top Body (1).
 Note:-The following step requires (2 off) ROLLER BOGIE™ Keys to screw Roller Pin (6.1) up thru Top Body (1) and Roller (5) and secure in position with Retaining Head (6.2).
 Roller Pin (6.1) and Roller Pin Retaining Head (6.2) are matched pairs they are identified by etched letters; keep screwed together to maintain relationship.
20. Insert Roll Pin (8) and (9) in Top Body (1) to retain Roller Pin (6.1) and Roller Pin Retaining Head in Position (6.2).
21. Repeat Steps 18 to 20 for the assembly of all Rollers (3) to Top Body (1) and Bottom Body (1).
22. Remove fully assembled Roller Bogie Drop Bar from vice.

The Roller Bogie Dropbar is now fully assembled.

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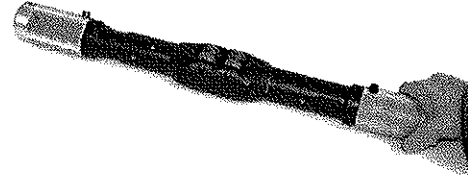
5.1.3.2 Validation



Rollers and swivels may lock up initially after greasing and need to be manipulated until they rotate freely.

After completion of the reassembly, the ROLLER BOGIE™ tool must be tested to ensure that it functions correctly:

1. Rotate the upper and lower swivels to ensure that they rotate freely.
2. Lay the assembly on a flat workbench and roll back and forth to ensure that all rollers rotate freely (photo).



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6 Storage & Transportation

The following section of the manual describes the storage and transportation instructions for all ROLLER BOGIE™ tools.



Before storing or transporting any ROLLER BOGIE™ tool, ensure that provision has been made to minimise the risks associated with the residual hazards detailed in section 2.2

6.1 Storage of ROLLER BOGIE™ tools

6.1.1 Prior to placing a ROLLER BOGIE™ tool into storage

1. **Routine Maintenance Service** – Carry out a routine maintenance service of the guide ROLLER BOGIE™ tool, as described in section 4.2.2

6.1.2 Storage of ROLLER BOGIE™ tools

6.1.2.1 Packing Requirements

It is recommended that where possible a ROLLER BOGIE™ tool is stored in a suitable and appropriately sized container. Do not put other tools or items in the same container. Storage in a container serves 2 functions: firstly it provides protection and minimises the risk of damage; secondly it restrains the ROLLER BOGIE™ tool to prevent it rolling from its storage position and causing loss, damage or injury.

The contents of the container should be clearly marked for future reference, as well as the date the tool was placed into storage.

6.1.2.2 Conditions of Storage

Before placing a ROLLER BOGIE™ tool into storage ensure that the storage location is clean, dry and unaffected by extremes of temperature or humidity.

6.1.3 After removal of ROLLER BOGIE™ tool from storage

1. **Routine Maintenance Service** – Carry out a routine maintenance service of the ROLLER BOGIE™ tool, as described in section 4.2.2

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6.2 Transportation of ROLLER BOGIE™ tools

6.2.1 Prior to transporting a ROLLER BOGIE™ tool

1. **Routine Maintenance Service** – Carry out a routine maintenance service of the ROLLER BOGIE™ tool, as described in section 4.2.2

6.2.2 During Transportation of ROLLER BOGIE™ tools

6.2.2.1 Packing Requirements

It is recommended that where possible a ROLLER BOGIE™ tool is transported in a suitable and appropriately sized container. Do not put other tools or items in the same container. To minimise the risk of damage to the ROLLER BOGIE™ tool and container, ensure that the ROLLER BOGIE™ tool is suitably restrained.

6.2.2.2 Conditions of Transportation

Ensure that the ROLLER BOGIE™ tool is transported in a container that is clean, dry and unaffected by extremes of temperature or humidity.

Ensure that the stored ROLLER BOGIE™ tool and/or container are adequately restrained to minimise the risk of damage or injury.

6.2.3 Procedure following transportation of ROLLER BOGIE™ tools

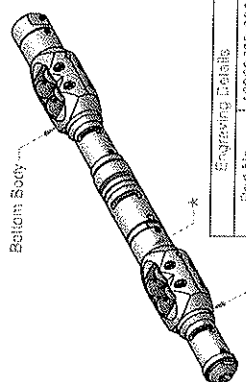
1. **Thorough Visual Examination** – Unpack the ROLLER BOGIE™ tool and carry out a thorough visual examination as described in section 4.2.2. This examination should determine whether the ROLLER BOGIE™ tool has suffered any damage or other ill effect during transportation.
2. **Routine Maintenance Service** – Carry out a routine maintenance service of the ROLLER BOGIE™ tool, as described in section 4.2.2.

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7 Assembly Drawings

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Created by:	N.J.Massie	Checked by:	B. Taylor	Approved by:	M Innes	

DESIGN SPECIFICATION	
Service	Standard
Top Connection	N/A
Bottom Connection	N/A
Fishneck	58.75 (2.313in) Δ
Max O/D	91.52 (3.56in)
Make Up Length	N/A
Weight	20.0kg (44.09lbs)



Engineering Details	
Part No.	10393600-0001
Rev. No.	F
W/D No.	

Parts List			
Item	Description	Qty	Part Number For 9.00mm Accessories F/ 5/16" Wire Size
1	Body	2	10393600-0103
2	Rotating End Pin	1	10393600-0202
3	Rotating Pin Stop	1	10393600-0302
4	Spacer	1	10393600-0802
5	Roller	8	10393600-0402
6	Roller Pin Sub Assembly	8	10393600-0076
6.1	Roller Pin	1	10393600-0506
6.2	Roller Pin Retaining Head	1	11193600-0706
7	O-Ring	16	83880014-0000
8	Roll Pin	4	84100187-0299
9	Roll Pin	8	84100187-0899
10	Rotating Sleeve	3	10393600-0702
11	Bottom Sub	1	10393600-0902
12	Top Sub	1	10393600-0602
13	Retainer Screw	3	10393600-1099
14	Retainer Screw	1	10393600-2299
15	Soc Head Set Screw	1	84000375-0499
16	Soc Head Cap Screw	3	84200250-0599
17	Socket Head Cap Screw	1	11193600-1799

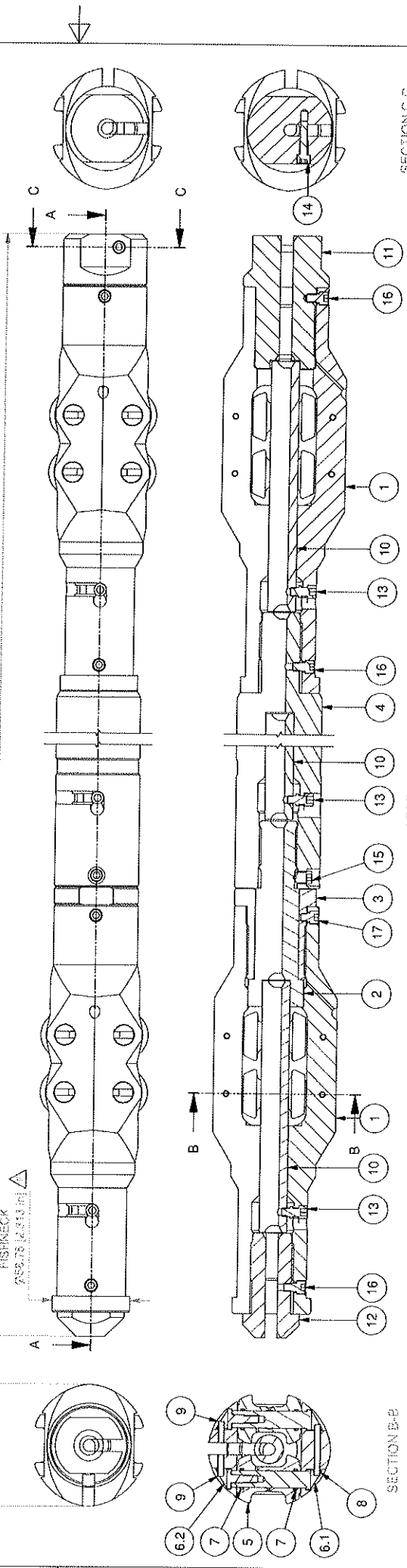
Part Number For 6.35mm Accessories F/ 7/32" 3/16" & 0.160" Wire Sizes	
10393600-1402	10393600-1802
10393600-1602	10393600-1902
10393600-1302	10393600-1702

Part Number For 4.00mm Accessories F/ 0.1252" 0.108" & 0.092" Wire Sizes	
10393600-2299 (2 Off)	10393600-2299 (2 Off)
84000375-0499 (2 Off)	84000375-0499 (2 Off)
84200250-0599 (3 Off)	84200250-0599 (3 Off)
11193600-1799 (2 Off)	11193600-1799 (2 Off)

OVERALL LENGTH 936.45 (36.829 in)

FISHNECK
58.75 (2.313 in) Δ

MAX O/D
91.52 (3.56 in)



Rev.	Date:	ECN No:
F	02-Apr-10	1039
E	26-Feb-10	1045
D	26-Aug-03	9553
C	05-Mar-00	0132
B	12-Sep-02	5061
A	17-Aug-02	5083
1	23-Apr-02	-
0	09-Feb-02	-

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Revolve all bolts and shafts unless otherwise stated.
All dimensions in millimeters (MKS).



Checked By:	B.Taylor	Drawn By:	N.J.Mosley	DO NOT SCALE	T.I.R.	0.15
Approved Date:	09-Feb-02	Approved By:	S.H.Henec	Thread Lead	45°	0.80
Sheet No:	1 of 1	Project No:		Chamfer	1:5	0.50
Part No:	10393600-0001	Thread Back	30°	Angle	± 0.50	0.15
Rev:	F	UNLESS OTHERWISE STATED				

Disposals:
3.60g Roller Scribe Drop Bar with 6mm Slot F/ 5/16" 6.35mm Slot F/ 7/32" 3/16" & 0.160" 4.00mm Slot F/ 0.1252" 0.108" & 0.092" Wire

8 Appendices

Appendix i

Toolstring Clearance Data

Appendix ii

Using the Toolstring Clearance Table to select a ROLLER BOGIE™ tool

Appendix iii

Greasing Roller Tools Guide

Appendix iv

COSHH Sheets

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ROLLER BOGIE CLEARANCE TABLE

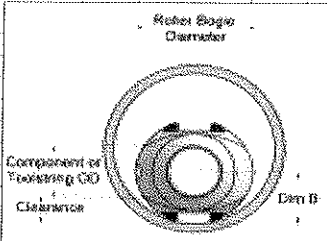


SLICKLINE ROLLER BOGIES: RELATIVE CLEARANCE or LIFT

NOTE: REFERENCE CASING/TUBING SIZES ARE SHOWN FOR CALCULATION PURPOSES ONLY. ROLLER BOGIE SIZES SHOULD BE CHOSEN TO SUIT OPERATIONAL NEEDS

Roller Bogie OD →	1.600	1.800	1.900	2.125	2.275	2.400	2.600	2.770	3.000	3.350	3.600	3.700	3.850	4.100	4.500	4.900	5.500
Ref. Tbg/Csg Size →	2.3/8	2.7/8	2.7/8	2.7/8	2.7/8	3.1/2	3.1/2	3.1/2	4.1/2	4.1/2	4.1/2	4.1/2	4.1/2	5	5.1/2	7	7
Ref. Tbg/Csg Wt →	4.6	6.4	6.4	6.4	6.4	9.2	9.2	9.2	12.6	12.6	12.6	12.6	12.6	15	17	29	29
Dimension "B" →	0.797	0.892	0.930	0.977	1.074	1.104	1.240	1.313	1.363	1.573	1.690	1.738	1.849	1.938	2.103	2.285	2.585

Component or Toolstring OD	* Dimension "B" is the distance between the center line of the Roller Bogie and the low side of the well bore.																	
1.1/4	1.250	0.17	0.27	0.31	0.35	0.45	0.48	0.62	0.69	0.74	0.95	1.07	1.11	1.22	1.31	1.48	1.66	1.96
1.5/16	1.313	0.14	0.24	0.27	0.32	0.42	0.45	0.58	0.66	0.71	0.92	1.03	1.08	1.19	1.28	1.45	1.63	1.93
1.3/8	1.375	0.11	0.20	0.24	0.29	0.39	0.42	0.55	0.63	0.68	0.89	1.00	1.05	1.16	1.25	1.42	1.60	1.90
1.7/16	1.438	0.08	0.17	0.21	0.26	0.36	0.39	0.52	0.59	0.64	0.85	0.97	1.02	1.13	1.22	1.38	1.57	1.87
1.1/2	1.500	0.05	0.14	0.18	0.23	0.32	0.35	0.49	0.56	0.61	0.82	0.94	0.99	1.10	1.19	1.35	1.54	1.84
1.9/16	1.563	0.02	0.11	0.15	0.20	0.29	0.32	0.46	0.53	0.58	0.79	0.91	0.96	1.07	1.16	1.32	1.50	1.80
1.5/8	1.625		0.08	0.12	0.16	0.26	0.29	0.43	0.50	0.55	0.76	0.88	0.93	1.04	1.13	1.29	1.47	1.77
1.11/16	1.688		0.05	0.09	0.13	0.23	0.26	0.40	0.47	0.52	0.73	0.85	0.89	1.01	1.09	1.26	1.44	1.74
1.3/4	1.750		0.02	0.06	0.10	0.20	0.23	0.37	0.44	0.49	0.70	0.82	0.86	0.97	1.06	1.23	1.41	1.71
1.13/16	1.813			0.02	0.07	0.17	0.20	0.33	0.41	0.46	0.67	0.78	0.83	0.94	1.03	1.20	1.38	1.68
1.7/8	1.875				0.04	0.14	0.17	0.30	0.38	0.43	0.64	0.75	0.80	0.91	1.00	1.17	1.35	1.65
1.15/16	1.938				0.01	0.11	0.14	0.27	0.34	0.39	0.60	0.72	0.77	0.88	0.97	1.13	1.32	1.62
2	2.000					0.07	0.10	0.24	0.31	0.36	0.57	0.69	0.74	0.85	0.94	1.10	1.29	1.59
2.1/8	2.125					0.01	0.04	0.18	0.25	0.30	0.51	0.63	0.68	0.79	0.88	1.04	1.22	1.52
2.1/4	2.250							0.12	0.19	0.24	0.45	0.57	0.61	0.72	0.81	0.98	1.16	1.46
2.3/8	2.375							0.05	0.13	0.18	0.39	0.50	0.55	0.66	0.75	0.92	1.10	1.40
2.1/2	2.500							0.06	0.11	0.32	0.44	0.49	0.60	0.69	0.85	1.04	1.34	
2.5/8	2.625								0.05	0.26	0.38	0.43	0.54	0.63	0.79	0.97	1.27	
2.11/16	2.688								0.02	0.23	0.35	0.39	0.51	0.59	0.76	0.94	1.24	
2.3/4	2.750									0.20	0.32	0.36	0.47	0.56	0.73	0.91	1.21	
2.7/8	2.875									0.14	0.25	0.30	0.41	0.50	0.67	0.85	1.15	
3	3.000									0.07	0.19	0.24	0.35	0.44	0.60	0.79	1.09	
3.1/8	3.125									0.01	0.13	0.18	0.29	0.38	0.54	0.72	1.02	
3.1/4	3.250										0.06	0.11	0.22	0.31	0.48	0.66	0.96	
3.3/8	3.375											0.05	0.16	0.25	0.42	0.60	0.90	
3.1/2	3.500												0.10	0.19	0.35	0.54	0.84	
3.5/8	3.625												0.04	0.13	0.29	0.47	0.77	
3.3/4	3.750												0.06	0.23	0.41	0.71		



+1 (337) 267-7888 or 1 (877) HI ANGLE

ELECTRIC LINE ROLLER BOGIES: RELATIVE CLEARANCE or LIFT

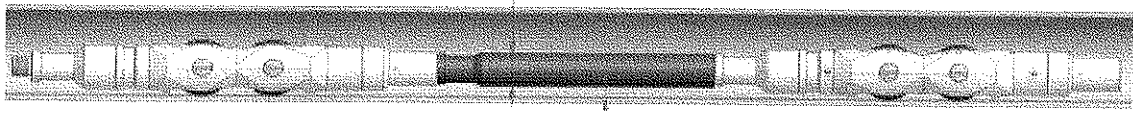
NOTE: REFERENCE CASING/TUBING SIZES ARE SHOWN FOR CALCULATION PURPOSES ONLY. ROLLER BOGIE SIZES SHOULD BE CHOSEN TO SUIT OPERATIONAL NEEDS

Roller Bogie OD →		1.950	2.125	2.275		2.600	2.770	3.000	3.350	3.600		3.850	4.100	4.500	4.900	5.500
Ref. Tbg/Csg Size →		2.3/8	2.7/8	2.7/8		3.1/2	3.1/2	4.1/2	4.1/2	4.1/2		4.1/2	5	5.1/2	7	7
Ref. Tbg/Csg Wt →		4.600	6.400	6.400		9.200	9.200	12.6	12.6	12.6		12.6	15	17	29	29
Dimension "B" →		0.936	1.000	1.071		1.227	1.323	1.345	1.571	1.688		1.874	1.947	2.101	2.284	2.602

Component or Toolstring OD	* Dimension "B" is the distance between the center line of the Roller Bogie and the low side of the well bore.																
1.1/2	1.500		0.19	0.25	0.32		0.48	0.57	0.60	0.82	0.94		1.12	1.20	1.35	1.53	1.85
1.9/16	1.563		0.15	0.22	0.29		0.45	0.54	0.56	0.79	0.91		1.09	1.17	1.32	1.50	1.82
1.5/8	1.625		0.12	0.19	0.26		0.41	0.51	0.53	0.76	0.88		1.06	1.13	1.29	1.47	1.79
1.11/16	1.688		0.09	0.16	0.23		0.38	0.48	0.50	0.73	0.84		1.03	1.10	1.26	1.44	1.76
1.3/4	1.750		0.06	0.13	0.20		0.35	0.45	0.47	0.70	0.81		1.00	1.07	1.23	1.41	1.73
1.13/16	1.813		0.03	0.09	0.16		0.32	0.42	0.44	0.66	0.78		0.97	1.04	1.19	1.38	1.70
1.7/8	1.875			0.06	0.13		0.29	0.39	0.41	0.63	0.75		0.94	1.01	1.16	1.35	1.66
1.15/16	1.938			0.03	0.10		0.26	0.35	0.38	0.60	0.72		0.91	0.98	1.13	1.32	1.63
2	2.000				0.07		0.23	0.32	0.35	0.57	0.69		0.87	0.95	1.10	1.28	1.60
2.1/8	2.125						0.16	0.26	0.28	0.51	0.63		0.81	0.88	1.04	1.22	1.54
2.1/4	2.250						0.10	0.20	0.22	0.45	0.56		0.75	0.82	0.98	1.16	1.48
2.3/8	2.375						0.04	0.14	0.16	0.38	0.50		0.69	0.76	0.91	1.10	1.41
2.1/2	2.500							0.07	0.10	0.32	0.44		0.62	0.70	0.85	1.03	1.35
2.5/8	2.625							0.01	0.03	0.26	0.38		0.56	0.63	0.79	0.97	1.29
2.3/4	2.750									0.20	0.31		0.50	0.57	0.73	0.91	1.23
2.7/8	2.875									0.13	0.25		0.44	0.51	0.66	0.85	1.16
3	3.000									0.07	0.19		0.37	0.45	0.60	0.78	1.10
3.1/8	3.125										0.13		0.31	0.38	0.54	0.72	1.04

REV: ADL Mar 2006 COPYRIGHT

sales@wireline-international.com



Clearance between component and tubing low side



CHOOSING THE CORRECT ROLLER BOGIE™ SIZE

The purpose of Roller Bogies is to eliminate or reduce friction by lifting and carrying the complete toolstring, enabling the wireline operation to be successful under challenging conditions.

Use the table overleaf to determine the clearance (the "lift", space or gap) between the toolstring and the low side of the tubing or casing.

How much clearance is enough?

The ideal clearance or lift depends on the type of job to be performed. Clearance is a function of the effective Roller Bogie OD and toolstring dimensions, which in turn are guided and governed by physical well-bore conditions including restrictions, depth, angle, wire diameter, well-bore geometry, sand production etc.

Slickline: In an older well, the wireline operator may choose to have greater clearance due to corrosion, well-bore deterioration, sand deposits, etc. In a new well with clean tubing, the operator may be successful with an extremely small clearance.

Electric line: When perforating, for example, typically the guns need to be as close to the wall as possible for maximum performance, yet may need to allow clearance for swelling/burring when pulling out of hole. The configuration for subsequent runs may have to take into account the need to roll over the detritus left from previously detonated guns. PL runs have other needs & requirements.

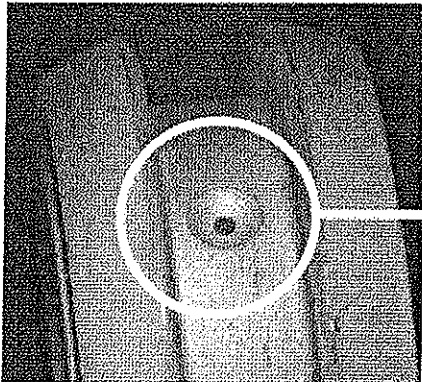
Using the table to choose Roller Bogie size.

1. Determine the maximum Roller Bogie size that can be used in your application. For example, if there is a 2.595" restriction, the largest Roller Bogie that could be used is 2.40".
2. What size toolstring will be used? For Example 1, we will assume 1.7/8" stem.
3. On the left of the table, find 1.7/8". At the top of the table, find 2.40" Roller Bogie. The number shown where 1.7/8" Toolstring intersects with 2.40" Roller Bogie (0.17") is the space in inches between the toolstring (or a toolstring component) and the low side of the tubing. **NOTE:** In this example, 2.275" Roller Bogies would also be appropriate, giving a clearance of 0.14". The "correct" choice of Roller Bogie depends on what job the wireline operator is performing.
4. Example 2: Although the 1.80" Roller Bogie would be suitable for a restriction of 1.925", using a 1.7/8" toolstring yields NO clearance – the Roller Bogie wheels would not be in contact with the tubing, so the toolstring would be sliding, not rolling. This means there would be NO friction reduction.
5. Example 3: For the same restriction of 1.925", using the 1.80" Roller Bogie with a 1.1/4" toolstring yields a clearance of 0.27" – this combination is an excellent means to reduce friction.

Our objective is to advise on clearances and the suitability of various tools sizes and configurations – which Roller Bogies will assist and enable you to run what size tools, etc. Ultimately, it is the knowledge, skill, and experience of the wireline operator that determines the final outcome of the job.

Questions? Need answers? Call us.... (337) 267-7888 or 1-877-HI ANGLE

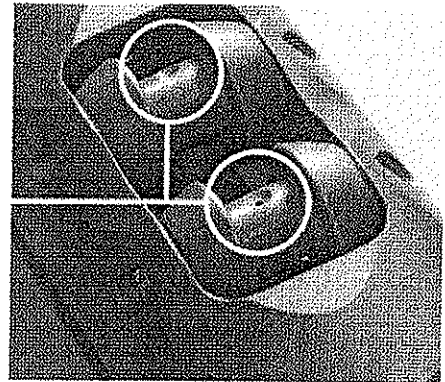
1. LOCATE GREASE PORTS ON WHEELS



SLICKLINE

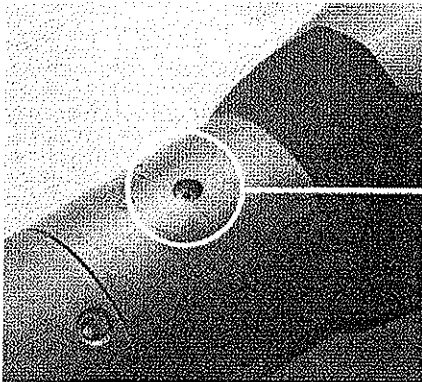
2 PORTS PER ROLLER

(GREASE IS INJECTED INTO ONE PORT PER ROLLER; ANY EXCESS GREASE EXITS FROM THE OPPOSITE SIDE).



ELECTRIC LINE

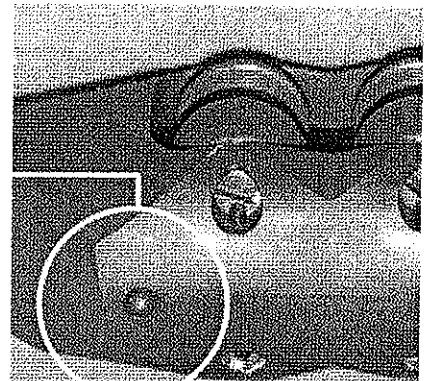
2. LOCATE GREASE PORTS ON BODY



TYPE 1

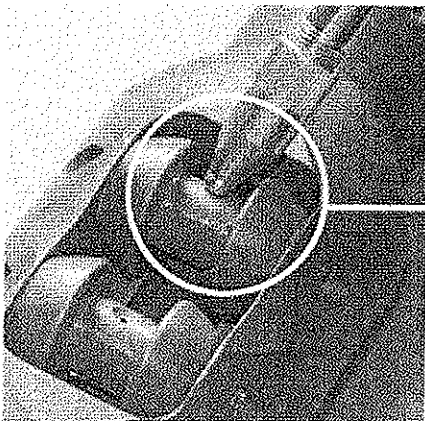
BODY HAS 2 PORTS

GREASE PORTS ARE EITHER TYPE 1 OR 2 (BUT NOT BOTH).



TYPE 2

3. INJECT GREASE – *PRIOR TO EVERY RUN*



HOW MUCH GREASE?

USE THE GREASE GUN AND SPECIAL PLAIN NIPPLE (PROVIDED) TO INJECT GREASE AT:

- ONE PORT PER ROLLER
 - 2 ROLLERS FOR SLICKLINE
 - 4 ROLLER FOR E-LINE
- TWO BODY PORTS

APPROXIMATELY 3-5 STROKES PER PORT. EXCESS WILL EXTRUDE FROM OPPOSITE PORT (ROLLERS) AND AT SHOULDERS (BODY PORTS).

HEALTH & SAFETY DATA:

LUBRIPLATE 930-A

General Information

PRODUCT NAME OR NUMBER

LUBRIPLATE No. 930-A, No. 930AA,
No. 930AAA, 930-2

GENERIC/CHEMICAL NAME:

Petroleum Lubricating Grease

Manufacturer's Name

Fiske Brothers Refining Co.

Address

1500 Oakdale Ave., Toledo, Ohio 43605

129 Lockwood Street, Newark, NJ 07105

FORMULA

Inorganic Thickener, Mineral Oil and Additives

USDA AUTHORIZATION

H-2

Emergency Telephone Number

1-800-255-3924-CHEM-TEL

(24 Hours)

Telephone Number for Information

419-691-2491 – Toledo

Office

Hazardous Ingredients/Identify Information

Hazardous Components OSHA PEL ACGIH TLV Non Hazardous

Other Limits Recommended % (Optional)

Hazardous Material Identification System (HMIS): Health - 1, Flammability - 1, Reactivity - 0

Not a Controlled Product under (WHMIS) – Canada

Health Hazard Data

Threshold Limit Value 5mg/m3 for oil mist in air. OSHA Regulation 29 CFR 1910.1000

Effects of Overexposure: PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE SKIN IRRITATION. PRODUCT CONTACTING THE EYES MAY CAUSE EYE IRRITATION. HUMAN HEALTH RISKS VARY FROM PERSON TO PERSON. AS A PRECAUTION, EXPOSURE TO LIQUIDS, VAPOURS, MISTS AND FUMES SHOULD BE MINIMIZED. THIS PRODUCT HAS A LOW ORDER OF ACUTE ORAL TOXICITY, BUT MINUTE AMOUNTS ASPIRATED INTO THE LUNGS DURING INGESTION MAY CAUSE MILD TO SEVERE PULMONARY INJURY.

Carcinogenicity: NTP? No IARC Monographs? No

OSHA Regulated? No

Emergency and First Aid Procedures

EYE CONTACT: Flush with clear water for 15 minutes or until irritation subsides. If irritation persists, consult a physician.

SKIN CONTACT: Remove any contaminated clothing and wash with soap and warm water. If injected by high pressure under skin, regardless of the appearance or its size, contact a physician IMMEDIATELY. Delay may cause loss of affected part of the body.

INHALATION: Vapour pressure is very low and inhalation at room temperature is not a problem. If overcome by vapour from hot product, immediately remove from exposure and call a physician.

INGESTION: If ingested, call a physician immediately. Do not induce vomiting.

Fire and Explosion Hazard Data

Flash Point (Method Used) COC – 400oF

Flammable Limits LEL 0.9% UEL 7.0%

Extinguishing Media: Foam, Dry Chemical, Carbon Dioxide or Water Spray (Fog)

Special Fire Fighting Procedures: Cool exposed containers with water. Use air-supplied breathing equipment for enclosed or confined spaces.

Unusual Fire and Explosion Hazard: Do not store or mix with strong oxidants. Empty containers retain residue. Do not cut, drill, grind or weld, as they may explode.

Physical/Chemical Characteristics

Boiling Point	>550oF
Specific Gravity (H₂O = 1)	0.94 – 0.97
Vapour Pressure (mm Hg.)	<0.01
Melting Point	Semi-solid
Vapour Density (AIR = 1)	>5
Evaporation Rate	<0.01 (Butyl Acetate = 1)
Solubility in Water	Negligible
Appearance and Odour	Smooth, tan grease with mineral oil odour.

Reactivity Data

Stability	Unstable	Conditions to Avoid	N/A
	Stable	X	
Incompatibility (Materials to Avoid)	Avoid contact with s strong oxidants like liquid chlorine, concentrated oxygen.		
Hazardous Decomposition or By-products	May form SO ₂ . If incomplete combustion. Carbon Monoxide		
Hazardous Polymerisation	May Occur		
	Will Not Occur	X	
Conditions to avoid	N/a		

Spill or Leak Procedures

Steps to be taken in case material is released or spilled

Scrape up grease, wash remainder with suitable petroleum solvent or add absorbent. Keep petroleum products out of sewers and watercourses. Advise authorities if product has entered or may enter sewers and watercourses.

Waste disposal method

Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste disposal facility or site.

SARA/TITLE III, Section 313 Status – Zinc Compounds - <8%

Special Protection Information

<u>Respiratory Protection (Specify type)</u>	Normally not needed	
<u>Ventilation</u> <u>Local Exhaust</u>	Used to capture fumes and vapours	Special N/A
<u>Mechanical (General)</u>		Other N/a
<u>Protective Gloves</u>	Use oil-resistant gloves, if needed	
<u>Eye Protection</u>	If chance of eye contact, wear goggles.	
<u>Other Protective Equipment</u>	USE OIL-RESISTANT APRON, IF NEEDED.	

Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep containers closed when not in use. Do not handle or store near heat, sparks, flame, or strong oxidants.

OTHER PRECAUTIONS

Remove oil-soaked clothing and laundry before reuse. Cleanse skin thoroughly after contact.

The above information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Fiske Brothers Refining Company. The data on these sheets relates only to the specific material designated herein. Fisk Brothers Refining Company assumes no legal responsibility for use or reliance upon this data.

Prepared January 2000.

Prepared by: James R. Kontak

DURON FOODMASTER CLEAR 2

Fully Synthetic Food Safe Grease with ptfе Dispersion

Composition

Blend of food safe synthetic grease with Ptfе dispersion.

Preparation is not classified as dangerous for supply on the basis of health effects under CHIP2.

Preparation is not subject to recognised exposure limits.

Hazards Identification

No reasonably foreseeable hazards to man or environment.

First aid Measures

<u>Inhalation</u>	n.a.
<u>Skin</u>	Wash with plenty of soap and water.
<u>Eyes</u>	Flush with plenty of water – if discomfort continues seek medical advice.
<u>Ingestion</u>	Rinse out mouth with water. Do not induce vomiting. Seek medical advice.

Fire Fighting Measures

<u>Extinguishing media:</u>	Sand, foam, CO2, powder.
<u>Combustion hazards:</u>	Fluorine compounds from decomposition of Ptfе at high temperatures.
<u>Protective equipment:</u>	Self-contained breathing sets if large quantity of burning grease in confined space.

Accidental Release Measures

<u>Personal precautions:</u>	Avoid contact with skin and eyes.
<u>Environmental precautions:</u>	Avoid contamination of watercourses and drains.
<u>Methods of cleaning up:</u>	Use absorbent such as a vermiculite and sweep up into containers.

Handling and Storage

Safe handling precautions: Normal hygiene precautions.

Safe storage: Keep drum closed.

Exposure Controls/Personal Protection

Exposure controls: Substance is not subject to recognised exposure limits.

Personal protection:

Respiratory: n.a.

Hands: Wear oil resistant gloves or barrier cream if regular skin contact is expected.

Eyes: Wear safety glasses if there is danger of spraying.

Physical and Chemical Properties

Appearance: Clear Paste

Odour: none

PH: n.a

Flash point: >235°C

Drop point: none melting

Relative density: 0.98

Solubility in water: insoluble

Kinematic viscosity: NLGI No 2 Grease

Stability and Reactivity

Conditions to avoid: No specific conditions

Materials to avoid: Strong oxidising agents

Hazardous decomposition: Pffe component may release fluorine compounds above 300 degC

Toxicological Information

Non-toxic.

Low order of irritancy.

May act as mild laxative if swallowed.

Ecological Information

Not available.

Disposal Considerations

Disposal of virgin product should present no hazard. Do not incinerate. Used product

may be contaminated with metal particles or other contaminants arising from the particular application for which the product has been used. Any method of disposal must take into account the contaminant present. The product may be disposed of via an authorised person/licensed waste disposal contractor.

All means of disposal should comply with local regulations and (in the UK) the Environmental Protection.

Act 1990. Dispose of product and containers carefully and responsibly. Do not allow product to contaminate ponds, water courses, solid or drains.

Do not re-use empty containers. Offer for recycling, reconditioning, or puncture to be disposed of in an approved land-fill site.

Transportation Information

Product is classified as **non-hazardous** under "Carriage of Dangerous Goods by Road and Rail" (Classification, Packaging and Labelling) Regulations 1994

Class: n.a.

Packaging Group: n.a.

Regulatory Information

CHIP2 Classification

This preparation is non hazardous and therefore falls outside the requirements of the CHIP2 Regulations. It is good working practice however to avoid contact with the skin and eyes.

The classification shown above does not remove the requirement for the user to conduct a Workplace risk assessment as required by COSHH.

V2.1 6 Oct 2000

DURON MULTIP 2

High Performance Lithium No 2 Grease with Zonyl PTFE from Du Pont

Composition

Blend of high purity mineral oil grease with Teflon dispersion, moisture displacement agents and corrosion inhibitors
Preparation is not classified as dangerous for supply on the basis of health effects under CHIP2.
Preparation is not subject to recognised exposure limits.

Hazards Identification

No reasonably foreseeable hazards to man or environment.

First aid Measures

<u>Inhalation</u>	n.a.
<u>Skin</u>	Wash with plenty of soap and water.
<u>Eyes</u>	Flush with plenty of water – if discomfort continues seek medical advice.
<u>Ingestion</u>	Rinse out mouth with water. Do not induce vomiting. Seek medical advice.

Fire Fighting Measures

<u>Extinguishing media:</u>	Sand, foam, CO2, powder.
<u>Combustion hazards:</u>	Fluorine compounds from decomposition of Teflon at high temperatures.
<u>Protective equipment:</u>	Self-contained breathing sets if large quantity of burning grease in confined space.

Accidental Release Measures

<u>Personal precautions:</u>	Avoid contact with skin and eyes.
<u>Environmental precautions:</u>	Avoid contamination of watercourses and drains.
<u>Methods of cleaning up:</u>	Use absorbent such as a vermiculite and sweep up into Containers.

Handling and Storage

<u>Safe handling precautions:</u>	None required
<u>Safe storage:</u>	Keep drum closed.

Exposure Controls/Personal Protection

Exposure controls: Substance is not subject to recognised exposure limits.

Personal protection:

Respiratory: n.a.
Hands: Wear oil resistant gloves or barrier cream if regular skin contact is expected.
Eyes: Wear safety glasses if there is danger of spraying.

Physical and Chemical Properties

Appearance: Light brown smooth grease
NLGI Classification 2
Thickener Lithium - Calcium
Dropping Point: 180°C min. ASTM D566

Stability and Reactivity

Conditions to avoid: No specific conditions
Materials to avoid: No specific materials
Hazardous decomposition: Teflon component may release fluorine compounds above 300 oC

Toxicological Information

Current data does not indicate any delayed or immediate toxicological effects from short-term Exposure.
Long-term skin contact may cause dermatitis.

Ecological Information

Contains mineral oil. Will not readily biodegrade.

Disposal Considerations

Disposal of virgin product should present no hazard. It may be treated as waste oil. Used product may be contaminated with metal particles or other contaminations arising from the particular application for which the product has been used. Any method of disposal must take into account the contamination present. The product may be disposed of via an authorised person/licensed waste disposal contractor.

All means of disposal should comply with local regulations and (in the UK) the Environmental Protection Act 1990. Dispose of product and containers carefully and responsibly. Do not

allow product to contaminate ponds, water courses, solid or drains.

Do not re-use empty containers. Offer for recycling, reconditioning, or puncture to be disposed of in an approved landfill site.

Transportation Information

Product is classified as **non-hazardous** under "Carriage of Dangerous Goods by Road and Rail" (Classification, Packaging and Labelling) Regulations 1994

Class: n.a.

Packaging Group: n.a.

Regulatory Information

CHIP2 Classification

This preparation is non hazardous and therefore falls outside the requirements of the CHIP2 Regulations. It is good working practice however to avoid contact with the skin and eyes.

The classification shown above does not remove the requirement for the user to conduct a Workplace risk assessment as required by COSHH.

V1.4 6 Oct 2000