



**BLACK SKY DIESEL**  
REPAIR & FABRICATION INC

# **DOMINATOR ROPE SKID**

## **OPERATIONS & MAINTENANCE MANUAL**



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**PATENT PENDING**

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## WARRANTY

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The warranty applies to all Black Sky Diesel manufactured components and equipment supplied.

Black Sky Diesel warrants the product to be free from defects in material and workmanship and to comply with the specifications and data described herein. This warranty is restricted solely to the replacement or repair of any defective materials, products of workmanship, or parts thereof, appearing within one (1) year of the date of delivery of the product.

Vendor's warranties apply for vendor components.

This warranty does not apply if accident, misuse, and/or environmental conditions damage the product, such as lightning, floods, fire etc., or as a result of service modifications other than those performed by Black Sky Diesel. For additional information on legal terms and conditions, title, risk, and negligence obligations consult Black Sky Diesel.

## OVERVIEW

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The Black Sky Diesel Dominator Rope Skid was designed for simple operation and maintenance while ensuring the safety of equipment and personnel. The Black Sky Diesel Dominator Rope Skid meets CSA S16:24 as required. Features include:

- Fork pockets for ease of moving
- Roll ends for tie down, dragging and lifting operations
- Easy maintenance and fewer moving parts
- Lugs to lift the spool and shaft assembly
- Braking system to maintain cable tension
- Easy spool drop in and locking system

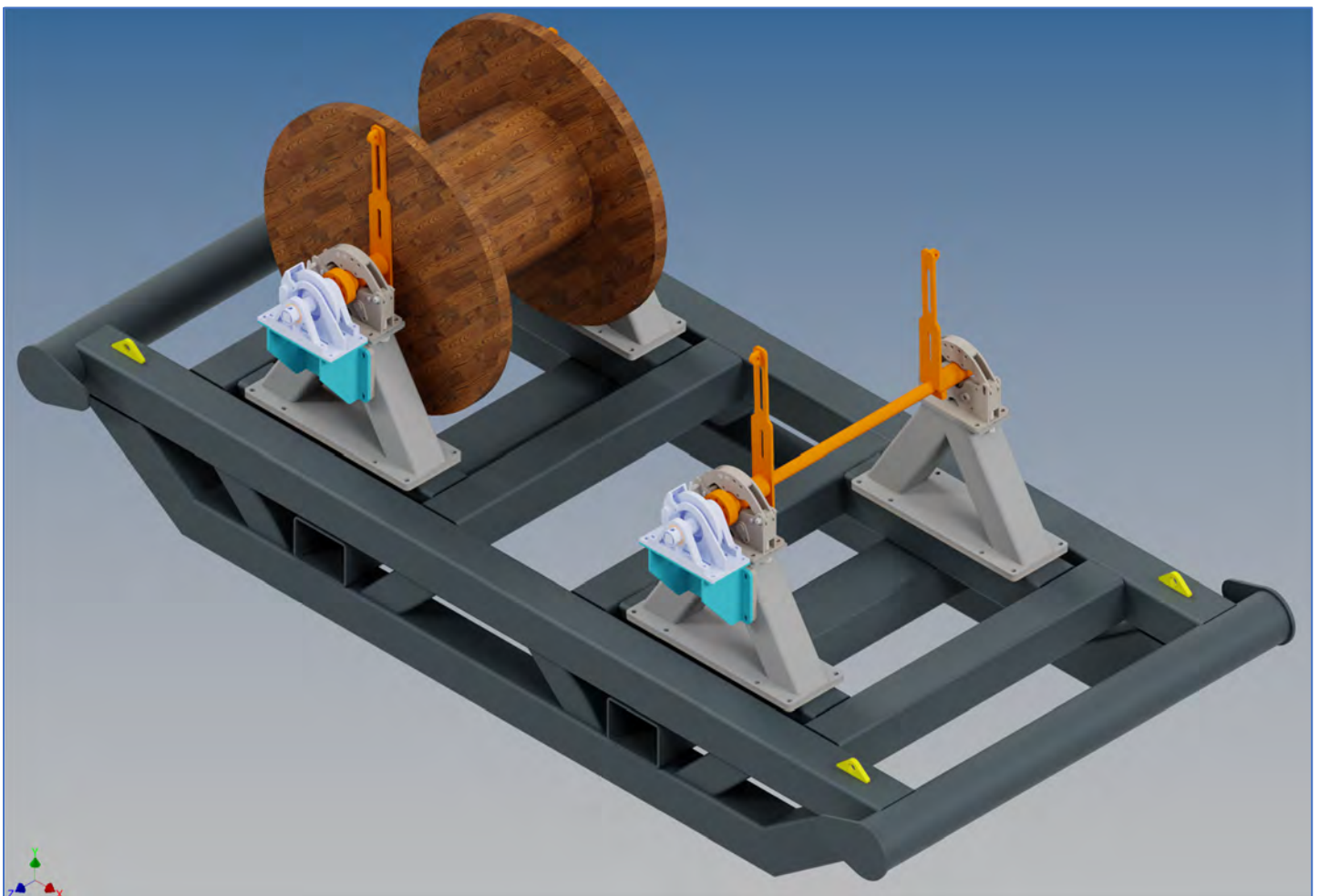


Figure 1 Rope Skid

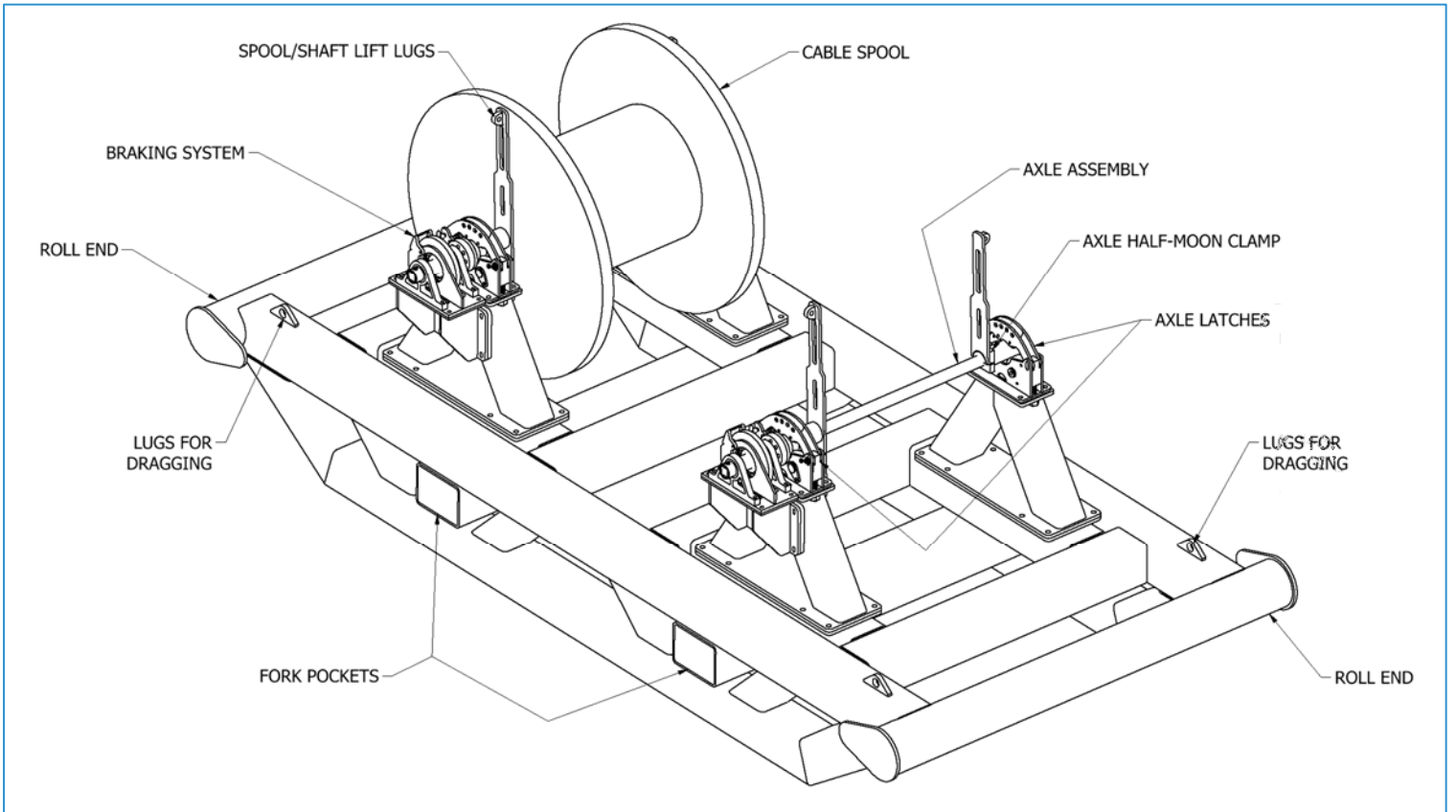


Figure 2 Rope Skid Assembly Components

## SAFETY

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Safety is the operator’s responsibility and must be of primary concern during operations or maintenance of this equipment. Reading and understanding the safety guidelines in this manual will assist in providing safety to personnel and to proper equipment operation. Only qualified personnel who are well versed in the applicable safety procedures of this manual may install, operate, and/or maintain this equipment. Consider the following before operating the equipment:

- Only operate the equipment when environmental conditions are safe
- Follow all safety regulations, signs, and labels on equipment
- Worn or defective parts must be replaced prior to operation
- Always maintain a safe worksite and ensure all equipment is secure, well maintained, and in correct working order

This manual will use the following standard safety terms and conventions to indicate conditions:

	<p><b>WARNING</b> Indicates a hazardous situation which, if not avoided, could result in death or serious injury.</p>
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	<p><b>CAUTION</b> Indicates a hazardous situation which, if not avoided, could result in personal injury and/or equipment damage.</p>
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	<p><b>NOTE</b> Indicates an important message not related to personal injury or property damage.</p>
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The product must be installed and operated in accordance with this manual and any other relevant company, vendor, and industry procedures, standards, and specifications.

## INSTALLATION & OPERATION

	<b>NOTE</b> Follow the vendor/company recommended reeving procedures and diagrams.
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	<b>WARNING</b> Follow all company and Safe Work policy and procedures to remove all load from the wireline before any installation or slip & cut operation. Failure to do so can result in catastrophic equipment damage, serious injury and/or death.
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	<b>CAUTION</b> Always be sure to keep hands and clothing away from the wireline and spool. Failing to do so could result in serious injury.
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### INSTALL AXLE INTO SPOOL



Figure 3 Axle Assembly

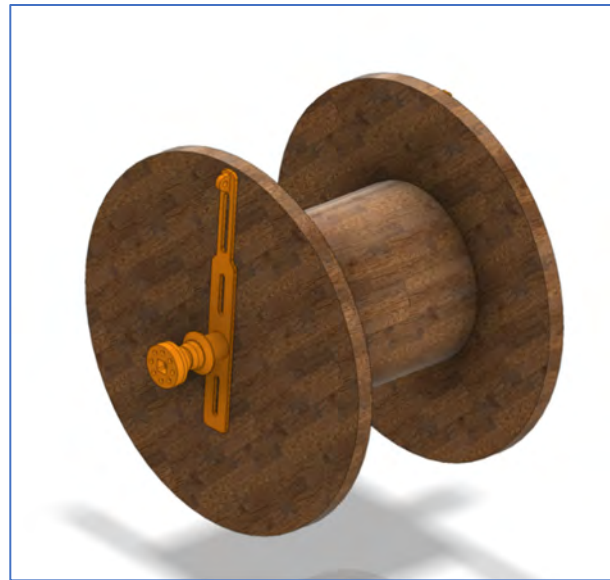


Figure 3 Axle Assembly Installed in Spool

1. Lift Axle Assembly and install into center bore of reel. The weight of the axle is approximately 200lbs.
  - a. It is recommended to utilize multiple people.
2. Adjust reel locking pins to fit into proper holes in the spool.
3. The axle must be pushed all the way into the spool. Failure to push the axle all the way through the spool may cause the axle lifting arms to contact A frame assembly.

## PREPARE SPOOL FOR INSTALLATION

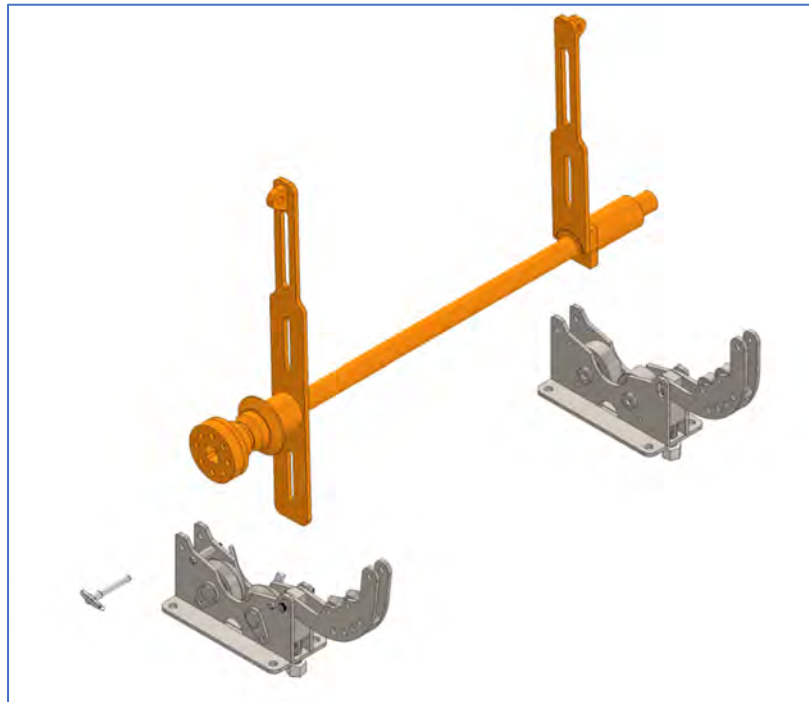
4. Loosen bolts on half-moon clamp, you will need a 1-1/8" wrench and socket.
5. Slide lifting arm assembly onto axle, once it's close to reel you can adjust the reel locking pins into proper position
  - a. Lifting arm must be installed all the way on or it will cause axle lift arms to contact A-Frame assembly
6. Once it is installed lock it to opposite side of reel and tighten half-moon clamps.
7. Install 3/4" shackle to lifting eye on lifting arms.
  - a. Use only 3/4" shackle.
  - b. The shackle must be removed from lifting arms before operation, or it will contact A-frame mounting plates.



### **CAUTION**

**Before operation, remove 3/4" shackle from spool lifting assembly.**

## INSTALLATION OF SPOOL ON SKID

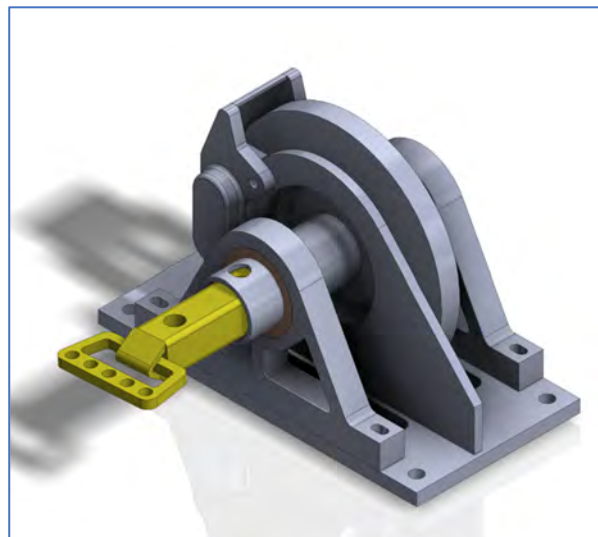


*Figure 5 Axle Assembly (Spool removed for clarity)*

8. Pull the T handle locking pin from latch assembly on top of A frame on each side.
9. Open latch assembly at both A-frames.



*Figure 6 Brake Assembly*



*Figure 7 Braking Assembly Locking Pin*

10. Pull back the handle on the square locking pin after removing the hitch pin. Lock into the extended position by replacing the hitch pin in the second hole.

11. Using proper rated wire rope slings, crane or zoom boom, lift axle and reel assembly
  - a. Weight of spool is 5,590lbs + axle assembly 200lbs (total approx. 6,000lbs).

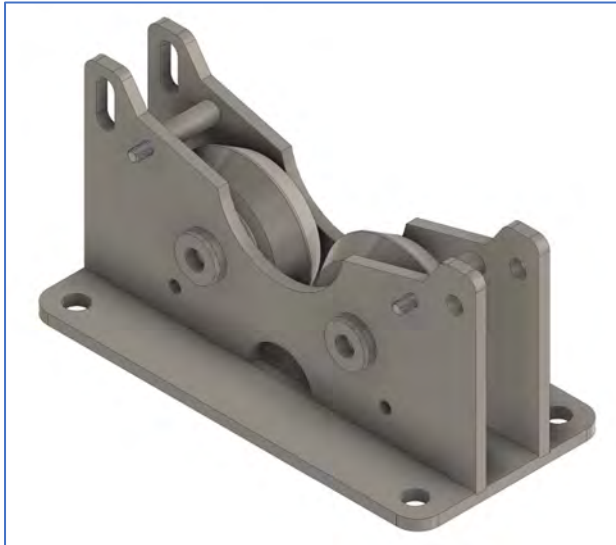


Figure 8 V-Groove Roller (Right Side)

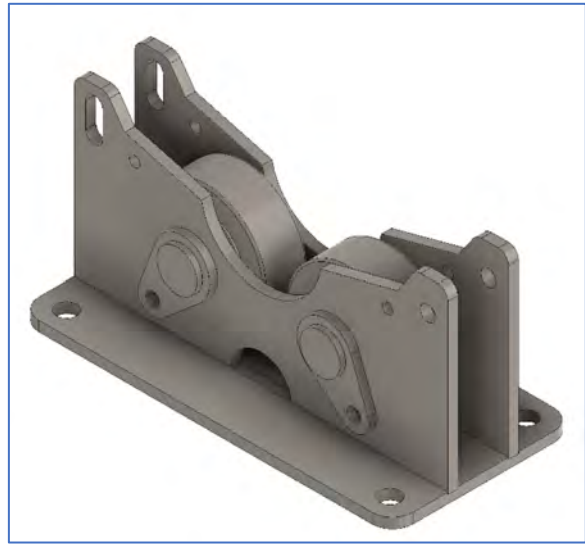


Figure 9 Flat Roller (Left Side)

12. Slowly lower the reel and axle assembly into position.
  - a. Align with V groove roller on axle assembly to the brake side of assembly using a tag line
  - b. Align wear sleeve on axle to flat roller side
  - c. Use care not to slam axle into brake bushings.
  - d. Once lowered into position, V grooves will center itself.
13. Close the latch assembly and insert the T-handle locking pin.
14. Push in and lock brake assembly locking pin (see Figure 6 & 7).
15. Ensure shackles are removed from lifting arms.



**CAUTION**

Before operation, remove  $\frac{3}{4}$ " shackle from spool lifting assembly.

## OPERATION OF BRAKING SYSTEM

16. Using the hand metering pump, set pressure to \_\_\_\_\_ psi for optimal drag.
17. If spool starts to free wheel, adjust hand metering pump to \_\_\_\_\_ psi to lock reel.
18. Slowly release pressure to \_\_\_\_\_ psi to return to normal operation.
19. Brakes should be locked when spooling is not in operation or during transport.



### **CAUTION**

**Engage brakes to lock spool for transport and handling.**

## REMOVAL OF SPOOL

20. Once the reel is empty, reverse the installation procedure
  - a. Remove the T-handle locking pin
  - b. Open both latch assemblies
  - c. Unlock and slide out brake assembly locking pin (see Figure 6 & 7)
  - d. Attach  $\frac{3}{4}$ " shackles to lifting arms on spool
  - e. Attach wire rope slings to shackles
  - f. Use crane or zoom boom to lift reel out of stand
21. Loosen bolts on half-moon clamp on wear sleeve side of axle
22. Remove wear sleeve side of lifting arm
23. Remove axle assembly from spool

## MAINTENANCE AND INSPECTION

Proper maintenance and inspection of the rope skid can impact the service life of the equipment. Developing and following a regular maintenance plan allows the operator to take preventative measures before serious issues can occur.

	<p><b>NOTE</b> Check brake pads before operating the spool.</p>
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### BRAKE PAD REPLACEMENT

Contact Black Sy Diesel for replacement of brake pads.

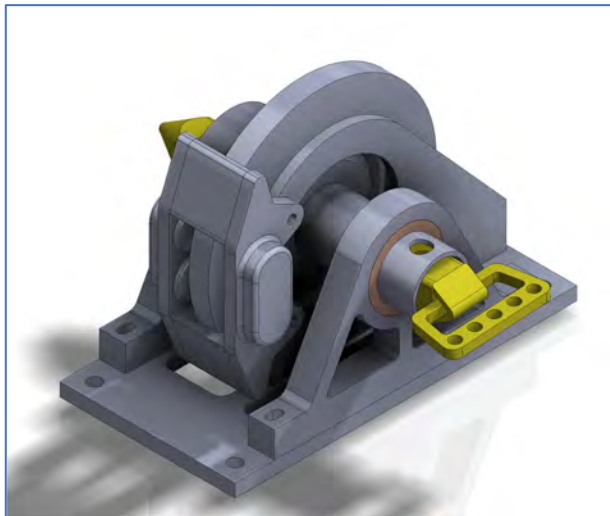


Figure 10 Brake Calipers

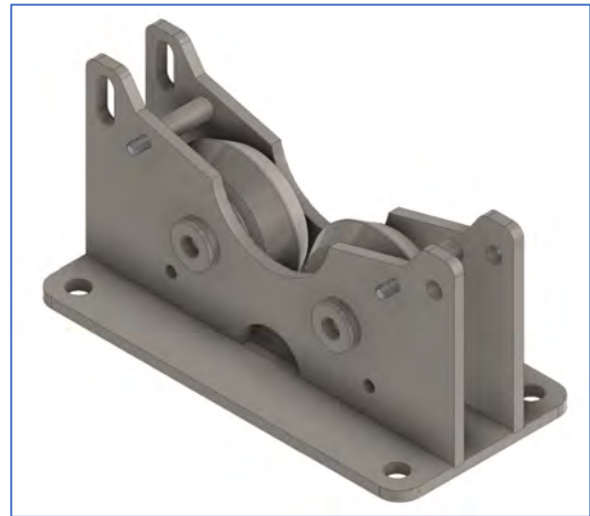



Figure 11 Rollers

- Grease zerks on the back side of the rollers (flat & v shaped) must be greased periodically. These can be added to the regular maintenance schedule.

### REPAIR

Following routine inspection or other incidents, repairs may be required to maintain the operating integrity of the rope spool. Contact Black Sy Diesel before performing any repairs to ensure they are performed without affecting the function or integrity of the anchor.

	<p><b>WARNING</b> Black Sky Diesel must be contacted before modifications of any kind are made to the rope skid. Proceeding without approval from Black Sky Diesel can result in injury or death.</p>
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## INSPECTION

Annual inspection of the skid, locking system and brake system should be performed by a qualified person. As this is a prototype unit, inspection intervals may change as required.

### Inspection Before Use

This inspection involves observing the equipment during operation for indications of inadequate performance. While in use, the equipment shall be visually inspected for the following:

- Cracks in materials or welds
- Cracks in fork pockets or roll ends
- Loose fits or engagement of rollers
- Elongation of parts, lifting and dragging lugs
- Signs or indications of abnormal wear, corrosion, or overloading

### Yearly Inspection

This inspection requires the equipment to be thoroughly checked in the field to determine serviceability. This may include Non-Destructive Testing (NDT) techniques on lifting points (lugs, fork pockets and roll ends). Yearly inspections are performed by qualified personnel such as senior operators designated by the company to have adequate knowledge and experience to perform such inspections. OEM may be contacted to assist in this inspection operation. The equipment shall be inspected to determine the condition of the following:

- All parts of the daily inspection
- All load bearing components
- Wear tolerances on brake pads
- Structural integrity of assembly

## COMPONENTS AND SPARE PARTS

ITEM	QTY.	PART NUMBER	TITLE	WEIGHT (lb)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
<b>Total Weight</b>				

<b>!</b>	<p><b>NOTE</b>                  ALL BOLTS, NUTS &amp; WASHERS TO BE SAE GRADE 8 ZINC PLATED OR EQUIVALENT, UNLESS NOTED OTHERWISE.</p>
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DOMINATOR ROPE SKID – OPERATIONS AND MAINTENANCE MANUAL

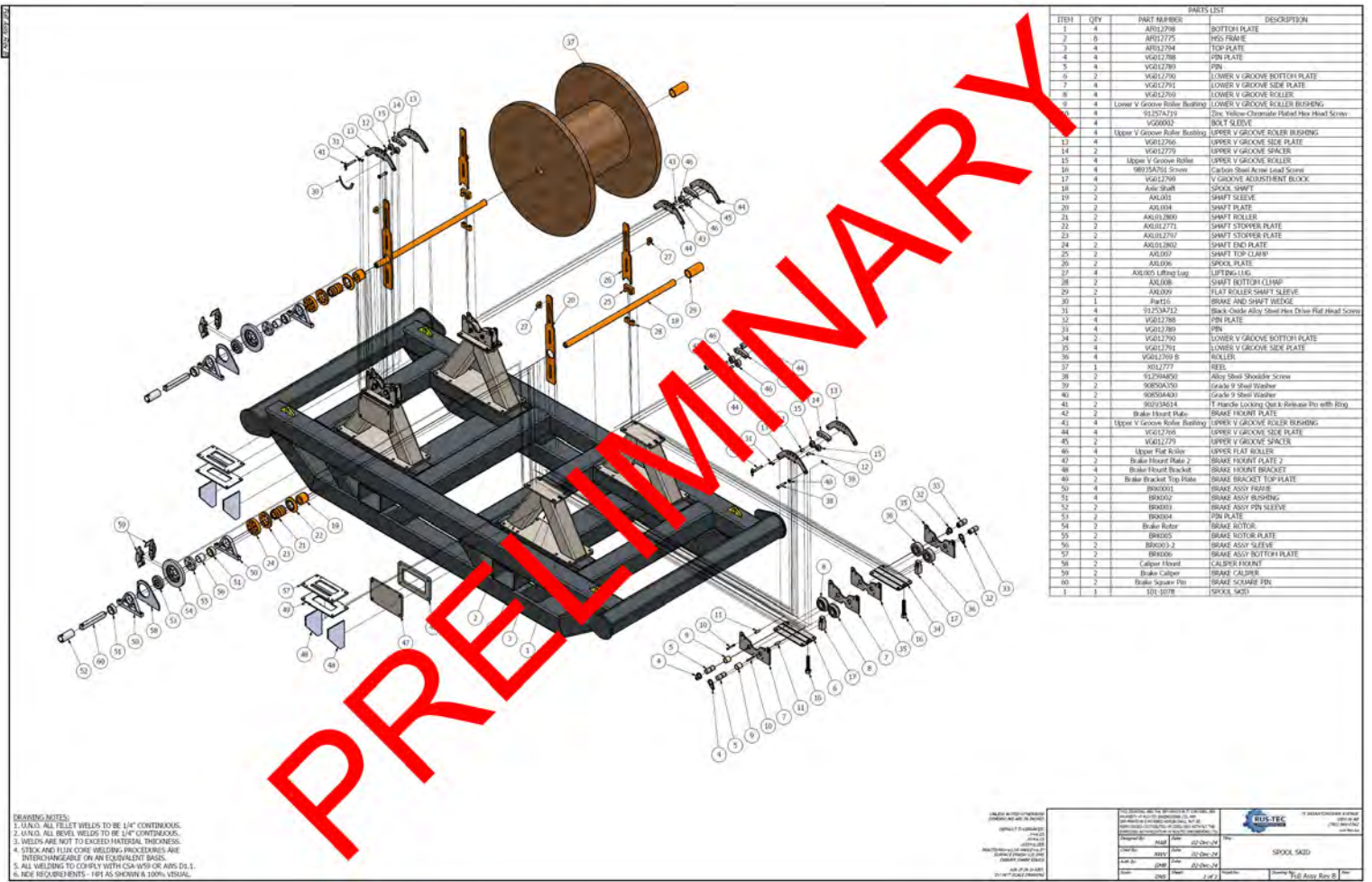


Figure 11 Spare Parts Diagram

# ASSEMBLY AND CRITICAL AREA DRAWINGS

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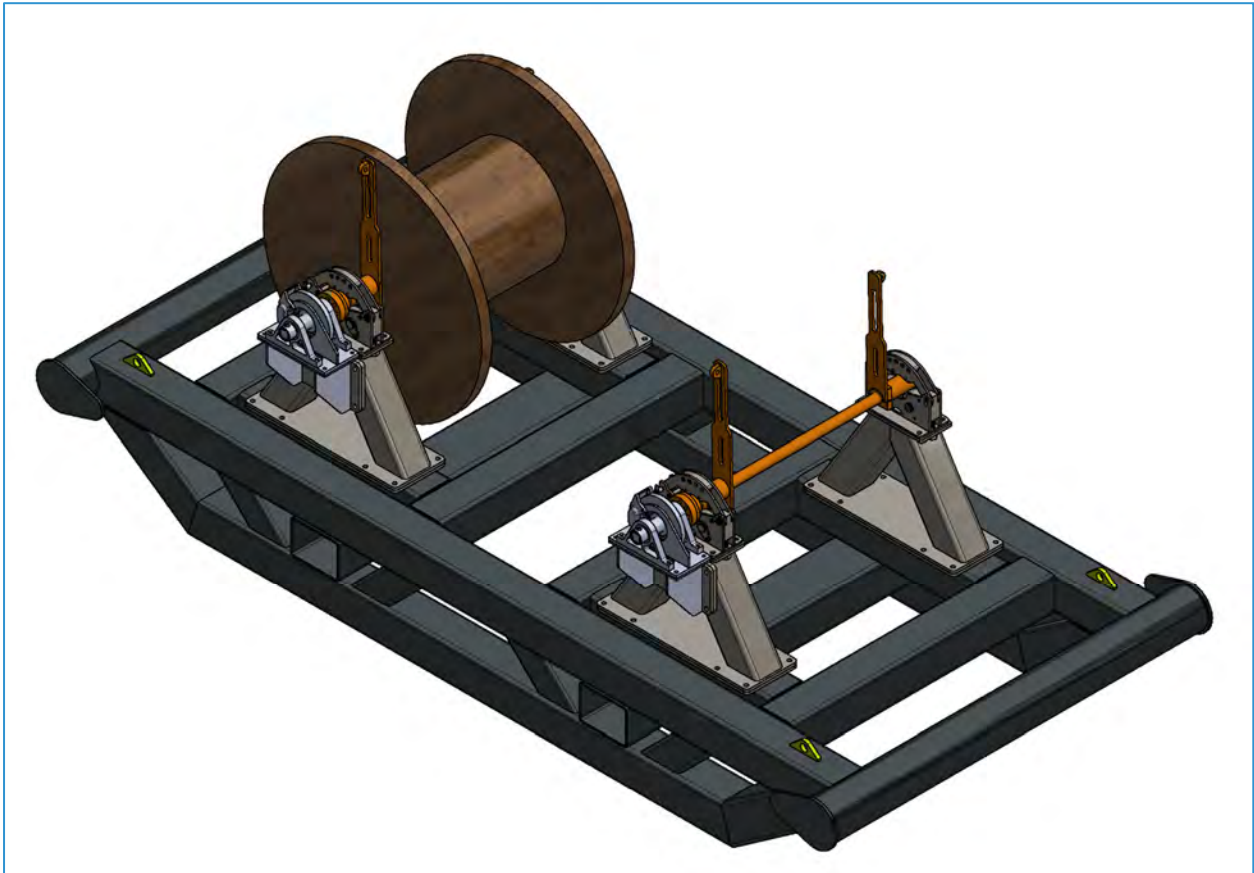


Figure 12 Dominator Rope Skid

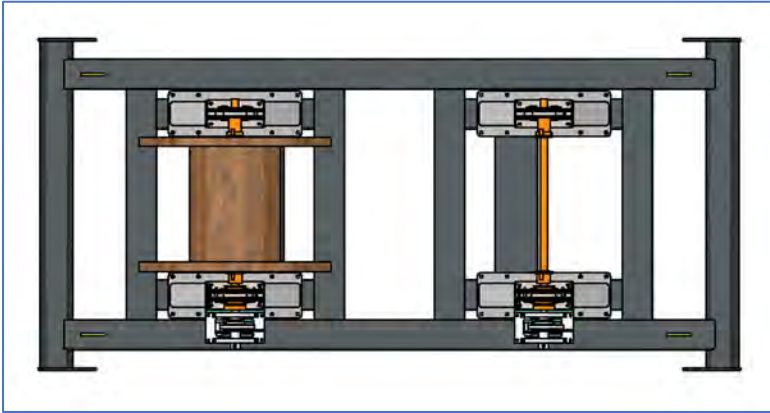


Figure 13 Top View

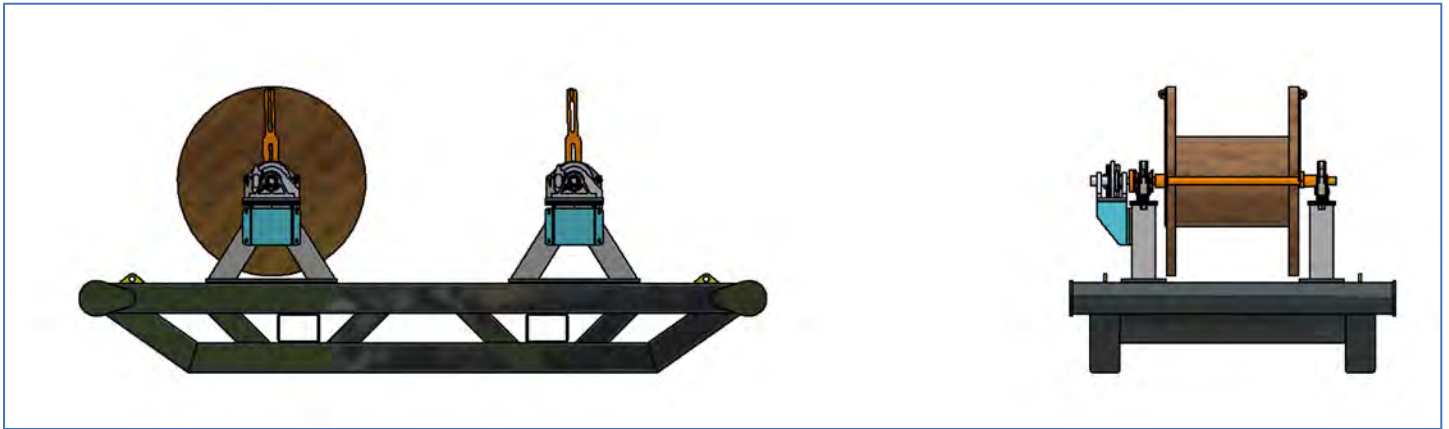


Figure 14 Front View

Figure 154 Right View

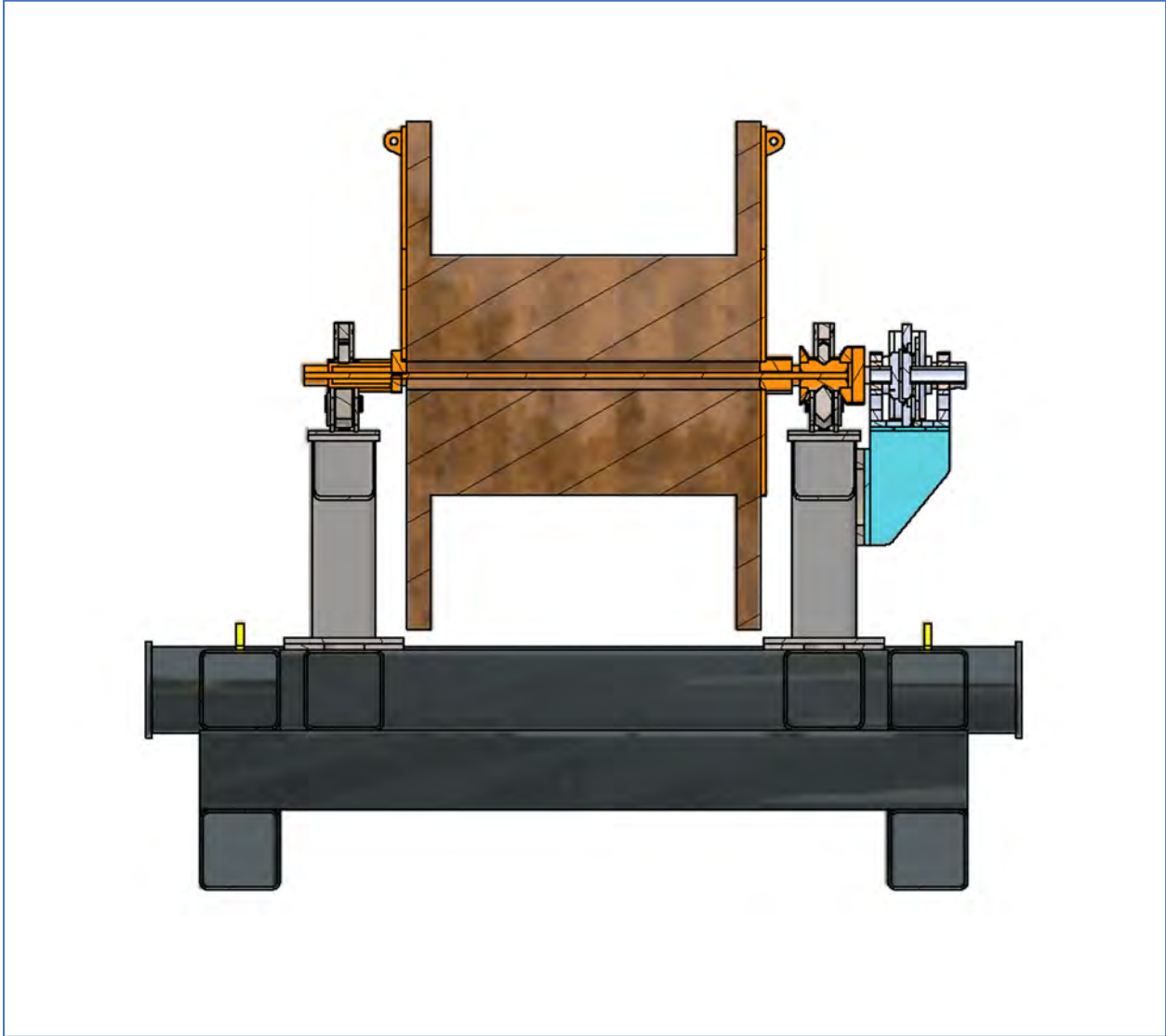


Figure 16 Section View