




Maintenance and Operation Manual for Engine Access Stand

 DF071554 – 06S

Liftsafe Fall Protection Inc.
Aircraft Maintenance Stand Manual



Manual Updates

Product Number: DF07155-06

Product Name: Aircraft Maintenance Stand

Subject and Page Number of Update	Date
Maximum Operating Wind Speed Page 20	May 9, 2016


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1.0 Standards

Tested in general accordance with the applicable requirements of

 DIN EN 131-2: 2012

 BS EN 131-7 : 2013

 ANSI-ASC A14.7-20-2011

The best insurance against an accident is a careful, qualified operator. Most accidents are caused by the failure of individuals to follow simple and fundamental safety rules and precautions. Use common sense when operating an aircraft maintenance stand.

You, as a careful operator, are the best insurance against an accident. Therefore, proper usage of this aircraft maintenance stand is mandatory. The following pages of this manual should be read and understood completely before operating the engine access stand.

Common sense dictates the use of protective clothing when working on or near machinery. Use appropriate safety devices to protect your eyes, ears, hands, feet and body.

Any modifications from the original design are strictly forbidden without written permission from Liftsafe Engineering and Service Group Inc.





2.0 Electrocution Hazard

This engine access stand is not electrically insulated. Maintain a Minimum Safe Approach Distance (MSAD) from energized power lines and parts as listed below. The operator must allow for the ladder to sway, rock or sag. This engine access stand does not provide protection from contact with or proximity to an electrically charged conductor.

DO NOT Use the Engine Access Stand as a ground for Welding.

DO NOT the Engine Access Stand during lightning or Storms.

Avoid Power Lines

Minimum Safe Approach Distance

Voltage Range (Phase to Phase)	Minimum Safe Approach Distance (Feet)	CE Guidance Note “Avoidance of danger from overhead lines”
0 to 300V	Avoid Contact	Adhere strictly to the governmental rulings and regulations applicable to your country.
Over 300 v to 50KV	10	
Over 50KV to 200KV	15	
Over 200KV to 350KV	20	
Over 350KV to 500KV	25	
Over 500KV to 750KV	35	
Over 750KV to 1000KV	45	

Failure to Avoid this Hazard Will Result in Death or Serious Injury!



3.0 Safety Precautions

Know and understand the Safety Precautions before use!

Failure to heed the following safety precautions could result in tip over, falling, crushing or other hazards leading to death or serious injury.

- 🔧 KNOW all national, state or territorial/provincial and local rules which apply to your engine access stand and jobsite.
- 🔧 WEAR all the protective clothing and personal safety devices issued to you or called for by job conditions.
- 🔧 DO NOT wear loose clothing, dangling neckties, scarves, rings, wristwatches or other jewelry while operating this ladder.
- 🔧 AVOID entanglement with ropes, cords or hoses.
- 🔧 AVOID falling. Stay within the boundaries of the handrails. Overreaching, while on the ladder, could cause instability and result in a fall. Always keep the unit in close proximity to work. Descend and relocate the unit to prevent overreach.
- 🔧 DO NOT raise the engine access stand in windy or gusty conditions.
- 🔧 DO NOT increase the lateral surface area of the engine access stand. Increasing the area exposed to the wind will decrease engine access stands stability.
- 🔧 DO NOT move or elevate the engine access stand if it is not on a firm level surface. Do not move near depressions or holes of any type, loading docks, debris, drop-offs and surfaces that may affect the stability of the engine access stand.
- 🔧 DO NOT operate on surfaces not capable of holding the weight of the engine access stand including the rated load e.g. covers, drains, and trenches.
- 🔧 DO NOT operate an engine access stand that has extensions, ladders, scaffolding or other devices mounted on it to increase its size or work height. It is prohibited.
- 🔧 DO NOT exert side forces on engine access stand.
- 🔧 DO NOT use the engine access stand as a crane. It is prohibited.
- 🔧 DO NOT sit, stand or climb on any part of the mobile ladder stand except the intended ladder rungs. It is prohibited.
- 🔧 DO NOT raise or lower the engine access stand with a person or equipment on the ladder. It is prohibited.

- 🔑 DO NOT move the engine access stand with a person or equipment on the ladder. It is prohibited.
- 🔑 ENSURE the ladder is only raised or lowered from an operator standing on the ground.
- 🔑 BE AWARE of overhead obstructions or other possible hazards around the engine access stand when moving or lifting.
- 🔑 DO NOT use the engine access stand while the aircraft maintenance stand is on a truck, fork lift or other device or vehicle.
- 🔑 BE AWARE of crushing hazards. Keep all body parts away from moving parts.
- 🔑 DO NOT lower the ladder unless the area below is clear of personnel and obstructions.
- 🔑 BE AWARE of blind spots when operating the aircraft maintenance stand.
- 🔑 STUNTS and horseplay are prohibited.
- 🔑 ENSURE ALL wheels are in good condition and all hardware is properly tightened.
- 🔑 DO NOT alter or disable safety devices.
- 🔑 DO NOT climb the engine access stand unless STRUT LOCKING PINS AND LADDER LOCKING PINS are fully engaged. See Fig 2 and Fig 3.
- 🔑 ENSURE all wheel brakes are locked and engine access stand is level prior to climbing ladder. See Fig 4.
- 🔑 ENSURE proper fall protection equipment is used in accordance with local rules and job specific requirements.
- 🔑 DO NOT exceed the rated capacity of the engine access stand.
- 🔑 DO NOT position the aircraft maintenance stand against another object to steady the platform.



Figure 2

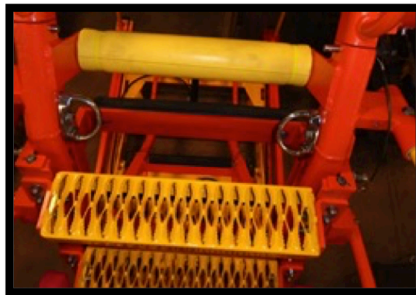


Figure 3



Figure 4

4.0 Fall Protection

If fall protection is required by the employer or the authority having jurisdiction, Liftsafe recommends the use of an overhead fall arrest anchor point centered above the engine access stand. Alternatively, a two point fall restraint anchor system exists on the ladder extension (Figure 5) and the top ladder (Figure 6). This fall restraint system would include a full body harness (example shown in Fig 7) with two short restraint lanyards that can be connected to the anchor point on the top ladder or ladder extension to keep an occupant within the confines of the handrails, and thus not expose the occupant to any fall hazard requiring a fall arrest.

All personal fall protection equipment must comply with applicable governmental regulations and must be inspected and used in accordance with the manufacturer's recommendations. Any fall protection system must comply with the requirements of the authority having local jurisdiction.

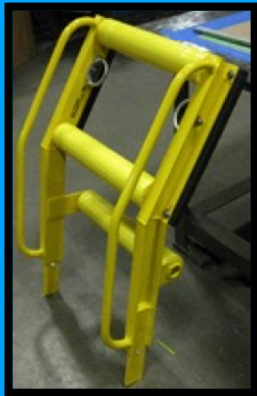


Figure 5

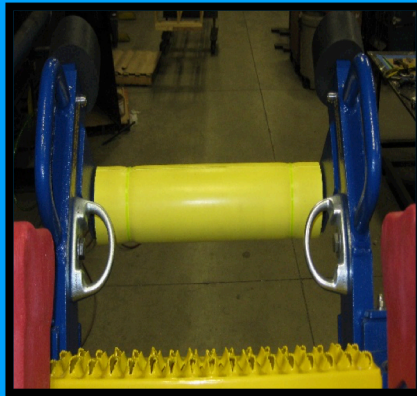


Figure 6








Figure 7

Ascending and descending the ladder shall only be done using three points of contact.

1. Use only equipped ladder for ascending and descending.
2. Do use three points of contact ascending and descending the ladder. Enter and exit from the ground only. Face the ladder when entering and exiting.
3. Three points of contact means that two hands and one foot or one hand and two feet are in contact with the ladder or the ground at all times during ascending or descending.




5.0 Inspections

5.1 An operator should not use any engine access stand that:

-  Does not appear to be working properly.
-  Has been damaged or appears to have worn or missing parts.
-  Has alterations or modifications not approved by the manufacturer.
-  Has safety devices which have been altered or disabled.
-  Has been tagged or blocked out for non-use or repair.

Failure to avoid these hazards could result in death or serious injury.

5.2 Jobsite Inspection

-  Do not use in hazardous locations.
-  Perform a thorough jobsite inspection prior to operating the engine access stand to identify potential hazards in your work area.
-  Be aware of moving equipment in the area. Take appropriate actions to avoid collision.

5.3 Maintenance and Inspection Schedule

The actual operating environment of the engine access stand governs the use of the maintenance schedule. The inspection points covered in Table 1.2 Maintenance and Inspection Checklist indicates the areas of the aircraft maintenance stand to be maintained or inspected and at what intervals the maintenance and inspections are to be performed.

5.4 Owner`s Annual Inspection Record

It is the responsibility of the owner to arrange quarterly and annual inspections of the engine access stand. Table 1.1 Owner`s Annual Inspection Record is to be used for recording the date of the inspection, owner`s name, and the person responsible for the inspection of the mobile ladder stand.

5.5 Replacement Parts

Use only original replacement parts. Parts such as wheels, handrails etc. with weight and dimensions different from original parts will affect stability of the engine access stand and must not be used without manufacturer's consent.



6.0 Assembly Instructions

Inspect all components of the Engine Access Stand prior to assembling and report any missing or damaged components to Liftsafe Engineering & Service Group Inc.

- 🔧 The Engine Access Stand is typically shipped fully assembled with the ladder strut locking pins removed to allow the stand to be collapsed down into a lower shipping position.
- 🔧 Place the Engine Access Stand on a flat surface in an area with an overhead crane. Alternatively, a lift truck or mobile crane may be used. Any lifting device used to assemble the Aircraft Maintenance Stand must be rated for a minimum 1,000 lbs. working load.
- 🔧 “Basket” a load rated nylon sling through the intermediate ladders anchor point’s and connect it to the hook of the overhead crane. Ensure the crane is centered above the intermediate ladders anchor points (Figure 8).
- 🔧 Ensure all four wheels are parallel with the ladder, all swivel locks must be engaged and ensure the wheel brakes are NOT engaged.
- 🔧 Slowly tilt the ladder back until the ladder is on an approx. 73 degree angle (Figure 9).
- 🔧 Once acquired insert the two sets of pull pins on each side into the last set of holes on the strut assembly (Figure 10).
- 🔧 Check remaining hardware on Engine Access Stand to ensure nothing has become loose during shipping.
- 🔧 Complete a start-up annual inspection and full function test prior to first use (refer to table 1.2).

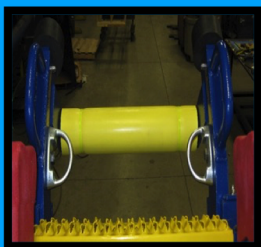


Figure 8



Figure 9

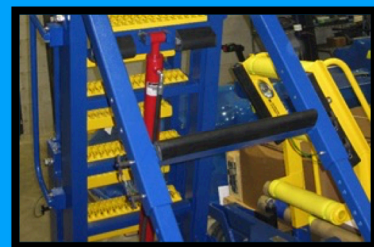


Figure 10

7.0 Preparation for Transport

(If Equipped)

- ⚙ The Engine Access Stand is equipped with a “Dual Tow Bar” system. When the unit is to be moved, fully retract the strut angle adjustment cylinder; the ladder should be at an approximate 73 degree angle
- ⚙ Ensure the wheel brakes are NOT engaged. Align the two trailing wheels (end away from the tow bars) to be parallel to the frame axis. Release the swivel locks of the two wheels closest to the tow bars.
- ⚙ Both of the tow bars must be securely attached to the tow motor' thru the tow eye(s) at the end of each arm (Figure 11). Alternatively, stand may be moved by hand using supplied push bars (Figure 12).
- ⚙ Ensure all removable components are located in positions and are properly secured.
- ⚙ Ensure all ladders are reduced and secured.
- ⚙ Maximum towing speed of 10 kph (6mph) not to be exceeded.



Figure 11

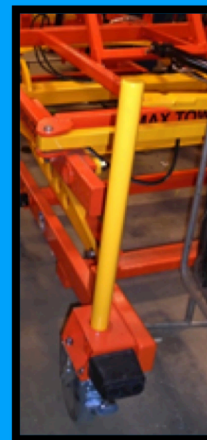


Figure 12

8.0 Setup for Operation

- 🔧 Position the Engine Access Stand on solid level surface.
- 🔧 Perform a 'Daily Visually Inspection' of the unit before proceeding. Should any attention be required due to the transporting of the unit, address those issues before proceeding.



Figure 13

9.0 Operation

9.1 Raising

- 🔧 To Increase pitch of Ladder
 - Push forward strut lever. See figure 14.
 - Pump foot pedal until desired position is reached while watching for obstructions
 - Release lever
- 🔧 To Extend Ladder
 - Push forward ladder lever. See figure 14.
 - Pump foot pedal until desired position is reached while watching for overhead obstructions
 - Release lever
- 🔧 Follow the safe climbing recommendations outlined on page 7.
- 🔧 Raise the ladder watching for any obstructions overhead.

9.2 Lowering

- 🔧 To decrease pitch of Ladder
 - Pull back ladder lever. See figure 14.
 - Pump foot pedal until desired position is reached while watching for obstructions
 - Release lever
- 🔧 To Contract Ladder
 - Pull back strut lever. See figure 14.
 - Pump foot pedal until desired position is reached while watching for obstructions
 - Release lever

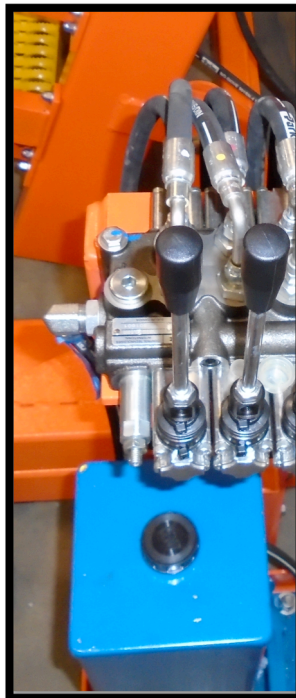


Figure 14

10.0 Maintenance, Service Safety Tips & Inspection

Any unit that is damaged or not operating properly must be immediately tagged and removed from service until proper repairs are completed

10.1 Maintenance and Service Safety Tips

- 🔧 Maintenance and repair should only be performed by personnel who are trained and qualified to service this aircraft maintenance stand
- 🔧 All maintenance and service procedures should be performed in a well-lit and well-ventilated area.
- 🔧 Anyone operating or servicing this engine access stand must read and completely understand all operating instructions and safety hazards in this manual.
- 🔧 All tools, supports and lifting equipment to be used must be of proper rated load and in good working order before any service work begins. Work area should be kept clean and free of debris to avoid contaminating components while servicing.
- 🔧 All service personnel must be familiar with employer and governmental regulations that apply to servicing this type of equipment.
- 🔧 Keep sparks and flames away from all flammable or combustible materials.
- 🔧 Properly dispose of all waste material such as lubricants, rags, and old parts according to the relative law provisions that apply in the jurisdiction.

10.2 Maintenance and Inspection

Death or injury can result if the engine access stand is not kept in good working order. Inspection and maintenance should be performed by competent personnel who are trained and qualified on maintenance of this aircraft maintenance stand.

Failure to perform each procedure as presented and scheduled may cause death, serious injury or substantial damage.

NOTE: Preventive maintenance is the easiest and least expensive type of maintenance.







- 🔧 Unless otherwise specified, perform each maintenance procedure with the engine access stand in the following configuration:
- 🔧 Engine access stand parked on a flat and level surface with wheel brakes engaged.
- 🔧 Repair any damaged or malfunction components before operating engine access stand.
- 🔧 Keep records on all inspections.

10.3 Maintenance Instructions

This manual consists of four schedules to be done for maintenance on an engine access stand. Inspection schedule frequency is shown below:

Inspection Schedule

- Daily A
- Frequently B
- Annually C
- Bi-Annually D

-  Make copies of the maintenance and inspection checklist to be used for each inspection.
-  Check the schedule on the checklist for the type of inspection to be performed.
-  Place a check in the appropriate box after each inspection procedure is completed.
-  Use the maintenance and inspection checklist to perform these inspections.
-  If any inspection receives a fail, tag and remove the aerial platform from service.
-  If any engine access stand component(s) has been repaired, an inspection must be performed again before removing the tag. Place a check in the repair column.

LEGEND		
P=PASS	F=FAIL	R=REPAIRED

Table 1.1 Owners Annual Inspection

Model Number:					Serial Number:				
Recording Date	1	2	3	4	5	6	7	8	9
Recording Year									
Owners Name									
Inspected By									



Table 1.2 Maintenance and Inspection Checklist

If any Engine Access Stand component(s) has been repaired, an inspection must be performed again before removing the tag. Place a check in the repair column.

Serial Number:	Operators Name: (Please Print)
Model Number:	
Date:	Operator's Signature:
Time:	

As each item is inspected, write the appropriating grade in the box.

P = Pass

F=Fail

R=Repaired

Inspection Schedule	
Daily	A
Frequently*	A+B
Annually	A+B+C
Bi-Annually	A+B+C+D

As each item is inspected, write the appropriate grade in the box.

P=PASS

F=FAIL

R=REPAIRED

A: Perform Visual and Daily Maintenance Inspections & Functions Test

B: Perform scheduled Maintenance Inspection every three months based on regular

C: Perform scheduled Maintenance Inspection every year

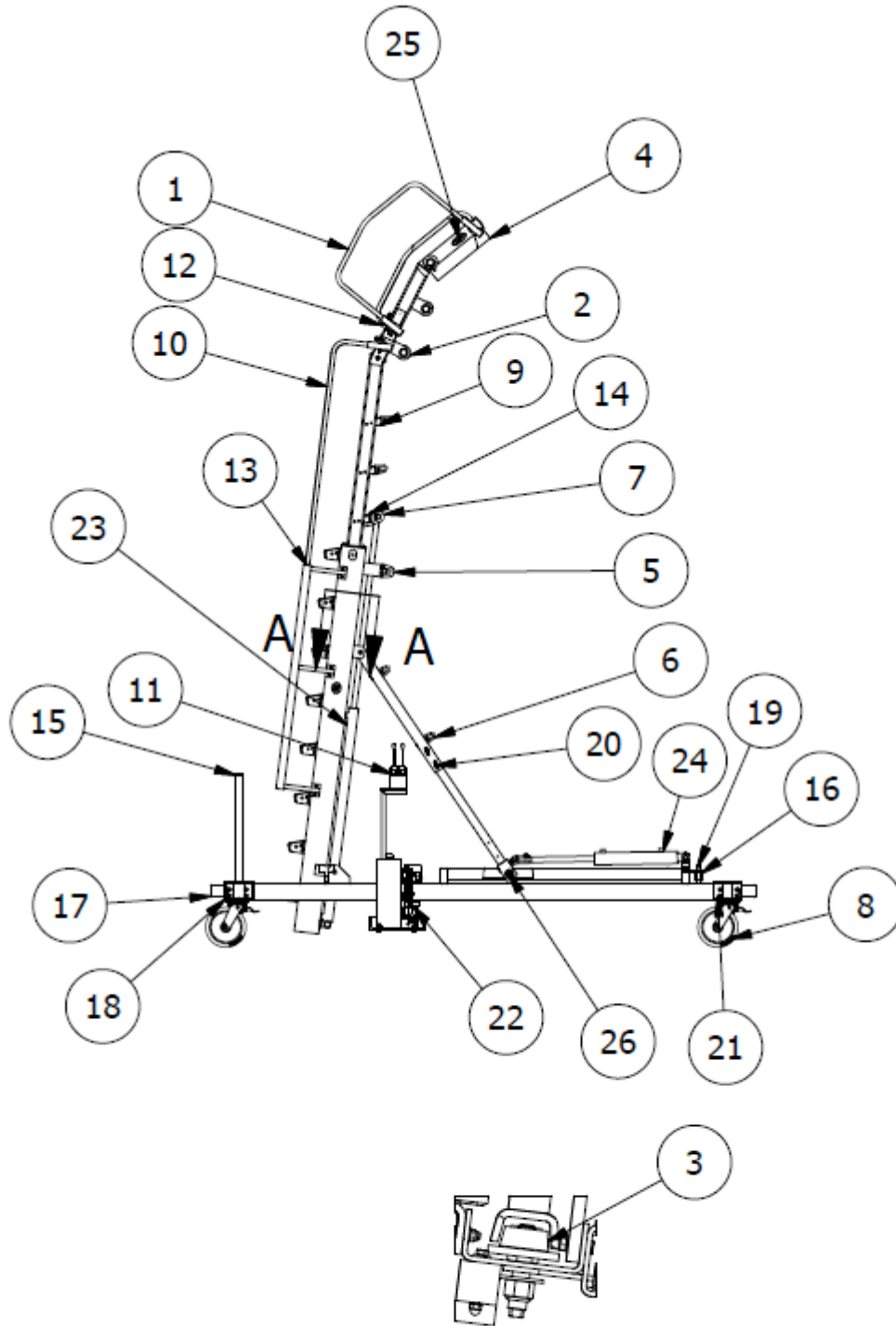
Schedule	P	F	R
Inspection Point			
Labels	C		
Wheel Brakes	A		
Caster Swivel Locks	A		
Strut Pull Pins	A		
Ladder Structure	A		
Base Frame Structure	A		
Hand Rails	A		
Bumpers	A		
Hardware	A		
Function Test	A		
Fall Restraint Anchor Points	A		
Track Rollers	A		
Ladder Guide Wheels	A		
Hydraulic Fluid Level	A		
Hydraulic Lines & Fittings	A		

NOTE: Make a copy of this page

11.0 Replacement Parts List

Item	Part Number	Description	Material
1	V01709	TOP REMOVABLE HAND RAIL	ALUMINUM
2	V00609	FOAM	RUBBER
3	V02006	LADDER GUIDE WHEEL	UHMW - BLACK
4	V00608	BUMPER	RUBBER
5	V00021	BUMPER	RUBBER
6	V00614	BUMPER	RUBBER
7	V01774	BUMPER	RUBBER
8	V01213	SWIVEL CASTER	RUBBER
9	V00019	STAIR TREAD UPPER LADDER	ALUMINUM
10	V01762	SLIDING HANDRAIL	ALUMINUM
11	V01340	CONTROL VALVE	STEEL
12	V02298	PULL PIN	STAINLESS
13	V01874	BEARING	UHMW
14	V01800	STAIR TREAD WITH CYLINDER MOUNT	STEEL
15	V01752	PULL BAR	STEEL
16	V01537	TOW BAR	STEEL
17	V01832	BUMPER	RUBBER
18	V01757	CASTER MOUNT	ALUMINUM
19	V01792	PULL PIN	STAINLESS
20	V01200	PULL PIN	STEEL
21	V01936	ROUND PLUG	NYLON
22	V01342	FOOT PUMP	STEEL
23	V00643	48" STROKE CYLINDER	STEEL
24	V01087	16" STROKE CYLINDER	STEEL
25	V00584	ANCOR POINT	STAINLESS
26	V00560	TRACK ROLLER	STAINLESS

Parts Listing Guide



SECTION A-A
SCALE 1/10

12.0 Lubrication

Approved Lubricants

Part Number	Description	For
L0145---098	AW-32	Hydraulic System

Lubrication Points

Description	Location	Lubricant
Track Roller	Struts End Points	General Lubricant
Swivel Casters (4)	Main Frame	Grease

Design Specifications

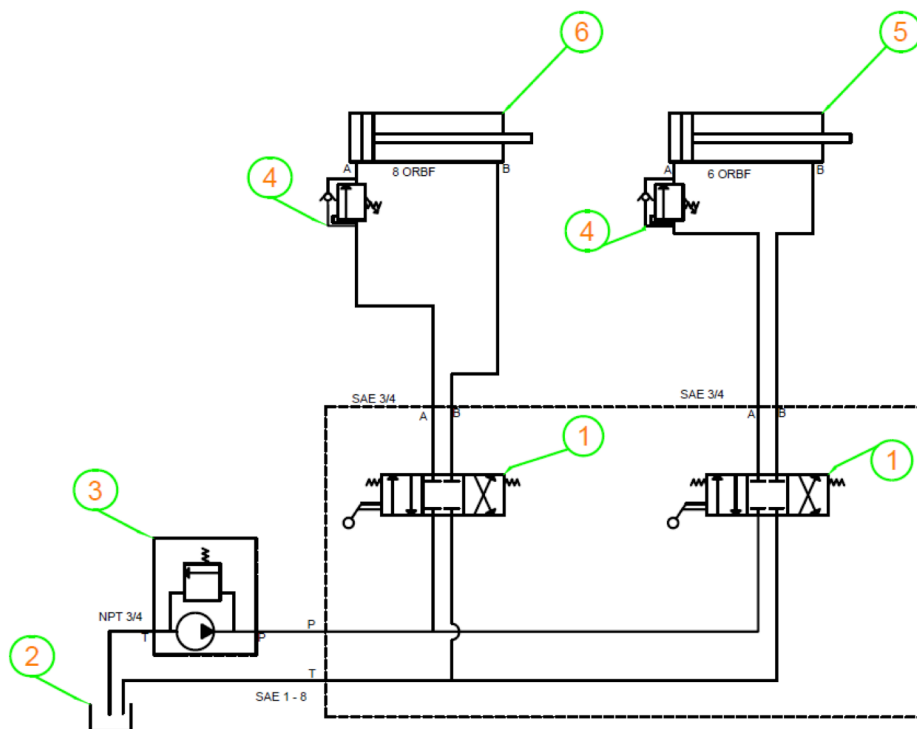
Rated Work Load:	Maximum 330lb
Gross Weight:	1100lb
Maximum Slope Rating:	0 degrees
Maximum Ground Pressure Supported with 4 Casters:	175 psi
Maximum Ground Pressure Supported with 4 Leveling Pads:	46.5 psi
Maximum Towing Speed	10 kph (6 mph)
Maximum Operating Pressure	1500 psi
Maximum Operating Wind Speed	45 kph (28 mph) 24 kn)

13.0 Hydraulics

Hydraulic Component List

Item	Part Number	Description	Item Quantity
1	V01340	DIRECTIONAL CONTROL VALVE	2
2	V01353	RESERVOIR TANK	1
3	V01342	FOOT PUMP	1
4	V01600	Counterbalance valve	2
5	V01087	16" STROKE CYL	1
6	V00643	48" STROKE CYL	1

Hydraulic Schematic



14.0 Notes

Engine Access Stand
Model# DF071554 – 06S
Maintenance and Operation



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