BRIDGE DECK FINISHERS

BDF6048B

SAFETY & OPERATIONS MANUAL

Manual Part #: 053016 | Revision: C
Language: English | Original Instructions

ALLEN
CONCRETE PAVERS

SECTION 1
INTRODUCTION

Table of Contents

Limited Warranty & Limitation of Liability

Allen Engineering Corporation ("Allen") warrants its products to be free of defects in material or workmanship for:

TWO YEARS FROM END USER'S DATE OF PURCHASE

Warranty period begins on the date of purchase by the End User of the product. All warranty is based on the following limited warranty terms and conditions, including the disclaimer of implied warranties and consequential damages.

1. Allen's obligation and liability under this warranty is limited to repairing or replacing parts if, after Allen's inspection, there is determined to be a defect in material or workmanship. Allen reserves the choice to repair or replace.
2. If Allen chooses to replace the part, it will be at no cost to the customer and will be made available to the Allen Distributor, Dealer, or Rental Center from whom the End User purchased the product.
3. Replacement or repair parts, installed in the product, are warranted only for the remainder of warranty period of the product as though they were the original parts.
4. Allen does not warranty engines or batteries. Engine warranty claims should be made directly to an authorized factory service center for the particular engine manufacturer. Batteries are not warranted due to unknown treatment during transport, etc, and any battery claims should be directed to the battery manufacturer.
5. Allen's warranty does not cover the normal maintenance of products or its components (such as engine tuneups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as belts and consumables).
6. Allen's warranty will be void if it is determined that the defect resulted from operator abuse, failure to perform normal maintenance on the product, modification to product, alterations or repairs made to the product without the written approval of Allen. Allen specifically excludes from warranty any damage to any trowels resulting from an impact to the rotors.
7. Impact damage to gear boxes is not covered under the Allen warranty and is deemed customer abuse.
8. Allen will pay shop labor on warranty items at the Allen Shop Labor Rate in existence on the date of the warranty claim. An Allen labor chart will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.
9. Allen will pay freight on warranty replacement parts at worldwide standard ground rates. No warranty replacement parts will be shipped air freight at the expense of Allen. Allen only pays outbound freight charges when sending warranty replacement parts to the customer via ground service. Allen does not pay any inbound freight. However, if Allen determines this to be a warranted item, only then will Allen reimburse the customer for inbound freight at standard ground rates.
10. ALLEN ENGINEERING CORPORATION'S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES; SHOP SUPPLIES; ENVIRONMENTAL SURCHARGES; AIR FREIGHT; TRAVEL TIME; LOSS OF TIME; INCONVENIENCE; LOSS OF RENTAL REVENUE; RENTAL COSTS OF EQUIPMENT USED TO REPLACE THE PRODUCT BEING REPAIRED; LOSS OF USE OF THE PRODUCT; COMMERCIAL LOSS; OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.
11. ALLEN ENGINEERING CORPORATION MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THIS LIMITED WARRANTY IS IN LIEU OF THE WARRANTY OF MERCHANTABILITY AND FITNESS. THERE ARE NO OTHER WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THIS DOCUMENT.
12. No Allen employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Allen Engineering Corporation.

SECTION 1 INTRODUCTION

Specifications

BASIC UNIT

- All welded steel construction that creates strength with a minimum of weight.
- Crown may be changed at any hinge point or at travel rail adjuster.
- Machine Length: ..... 36 Ft - (10.9 M) Can be extended to 160 Ft (Consult Factory) (48.77 M)
- Leg Span: ..... 33.4 Ft (10.2 M) Maximum, 15.0 Ft (4.57 M) Minimum
- Paving Width: ..... 31.3 Ft (9.5 M) Maximum, 12 Ft (3.65 M) Minimum
- Heavy Duty Legs: ..... 6 In (15.2 Cm) Diameter
- Bogie Assembly (2 Wheels per Bogie): ..... 4 Ft Wheel Center to Wheel Center (1.22 M)
- Operating Weight: ..... 10,000 Lbs (4535.9 Kg)
- Machine Travel Speed: ..... 0 to 55 Ft per Minute (0 to 16.76 M per Minute)
- Machine Advance per Carriage Pass: ..... 0 to 15 Inches (0 to 38.1 Cm)
- Battery: ..... 12 Volt
- Power Unit Engine: ..... 23.5 HP Kohler Gasoline Engine
- Power Unit Engine (Option): ..... 32 HP Kubota Diesel Engine

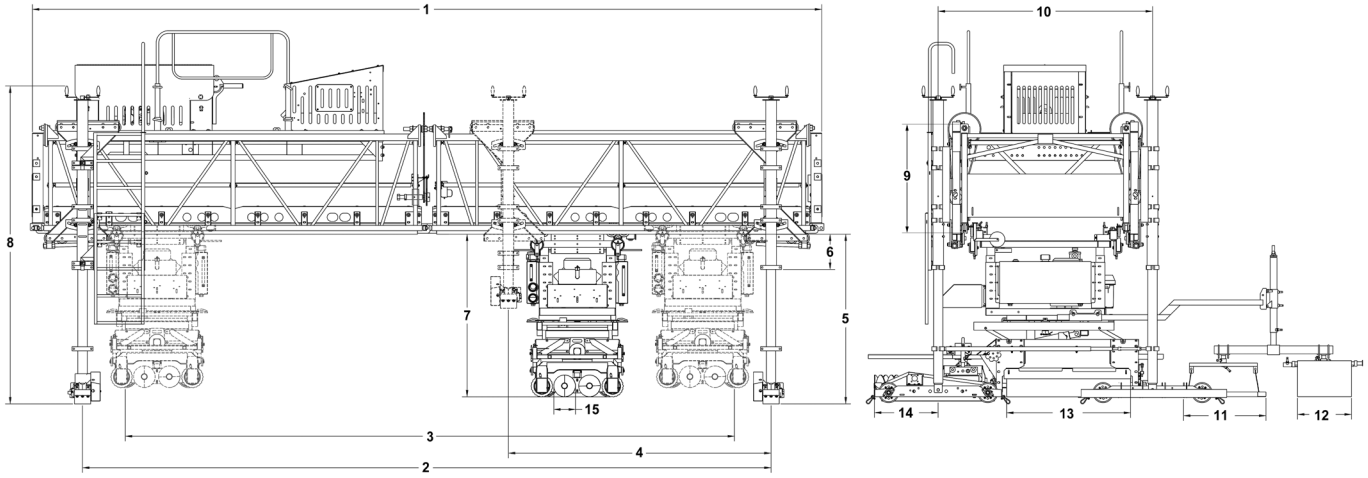
PAVING CARRIAGE

- Turntable mounting to allow for skewed decks.
- Independently adjustable dual augers.
- Five foot long dual rollers.
- Independent roller rotation with automatic roller reversing or non-roller reversing.
- Automatic cushioned paving carriage travel reversal.
- Adjustable Drag Pan and Texturing Drag.
- Roller-Tamp
- Carriage Travel Speed: ..... 0 to 120 Ft per Minute (0 to 30.48 M per Minute)
- Power Unit Engine: ..... 23.5 HP Kohler Gasoline Engine
- Power Unit Engine (Option): ..... 32 HP Kubota Diesel Engine

POPULAR OPTIONS

- Extension Inserts: ..... 18 Ft (5.48 M), 15 Ft (4.57 M), 12 Ft (3.65 M), 6 Ft (1.83 M), and 3 Ft (0.91 M)
- Manual Crown Adjuster
- Power Crown Adjuster
- Skew Bar Kit
- Swing Out Legs
- Power Legs
- Power Widening
- Carriage Lift
- Dual Drag Pan
- 6-Wheel Bogie Distribution System

Specifications - Continued



KEY	DESCRIPTION	MEASUREMENT	
A	Overall Machine Length	36 Ft 6 In	11.12 M
B	Leg Span - Independently Adjustable Jack Mounts	33 Ft 3 In	10.15 M
C	Finishing Width	31 Ft 4 In	9.55 M
D	Maximum Leg Travel -Independently Adjustable Jack Mounts	15 Ft 3 In	4.66 M
E	Maximum Frame Clearance Above Screed Rail	47 In	119.38 Cm
F	Minimum Frame Clearance Above Screed Rail	15 In	38.10 Cm
G	Frame Clearance Above Finished Concrete	37 In	91.44 Cm
I	Height to Top of Leg	111 In	2.82 M
J	Height of framework	48 In	121.92 Cm
K	Leg Center Spacing	90-3/4 In	2.31 M
L	Drag Pan Length	33 In	83.82 Cm
M	Burlap Drag Length	19 In	48.26 Cm
N	Finishing Roller Length	60 In	152.4 Cm
O	Auger Length	32 In	81.28 Cm
P	Auger Diameter	8 In	20.3 Cm

SECTION 1 INTRODUCTION

Introduction

This manual has been compiled to assist the owner/operator with the correct setup, operation and routine maintenance needed for the safe and efficient use of the 6048 Bridge Deck Paver. In order to maximize the performance and efficiency of the Paver it is VERY IMPORTANT that the owner/operator and maintenance personnel read this manual thoroughly before operating or servicing the machine. You should have a basic knowledge about the handling of concrete products and should be trained and licensed per state requirements before operating this equipment. Always keep this manual in a convenient place for instant reference and never attempt to make repairs or adjustments that you do not fully understand. If you require any additional information or service do not hesitate to call the Allen Paver Service Department. (Tel: 800-643-0095 - Fax: 800-643-0097)

OPERATOR QUALIFICATION

Operation shall be limited to personnel with the following minimum qualifications:

1. Designated persons.
2. Trainees under the direct supervision of a designated person.
3. Maintenance and test personnel (when it is necessary in the performance of their duties).

Operators shall be required by the employer to pass a practical operating examination. Qualifications shall be limited to the specific type of equipment for which examined. Operators and operator trainees shall meet the following physical qualifications:

1. Vision of at least 20/30 Snellen in one eye and 20/50 in the other, with or without corrective lenses.
2. Ability to distinguish colors, regardless of position, if color differentiation is required for opera tion.
3. Adequate hearing, with or without hearing aid, for the specific operation.

Evidence of physical defects or emotional instability which could render a hazard to the operator or others, or which in the opinion of the examiner could interfere with the operator's performance, may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgements and tests may be required.

Evidence that an operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions. Operators and operator trainees should have normal depth perception, field of vision, reaction time, manual dexterity, coordination and no tendencies to dizziness or similar characteristics.

In addition to the above listed requirements, the operator shall:

1. Demonstrate the ability to comprehend and interpret all labels, operator manuals, safety codes and other information pertinent to the operation of the paver.
2. Possess knowledge of emergency procedures and implementation of same.
3. Demonstrate to the employer the ability to operate the specific equipment.
4. Be familiar with applicable safety regulations.
5. Understand responsibility for maintenance requirements.
6. Understand the operating procedures as outlined by the manufacturer.

OPERATOR CONDUCT

1. The operator shall not engage in any practice which will divert his/her attention while actually engaged in operating the machine.
2. Each operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor.
3. If there is a warning sign on a switch, engine control or paver component, the operator shall not close the switch, start the engine or use the component until the warning sign has been removed or acknowledged by the appointed person.
4. Before operating the paver, the operator shall see that all controls are in the "off" or neutral position and that all personnel are in the clear.
5. In accordance with OSHA regulations 1928.51 and 1928.52, operating instructions must be provided initially to operators/employees before allowing them to operate the paver and should be reviewed annually thereafter.

The most **IMPORTANT** safety device on this equipment is a well trained and safe operator. It is his/her responsibility to read and understand all safety and operating instructions in this manual. A person who has not read and understood all operating and safety instructions is not qualified to operate the paver. An untrained operator exposes himself/herself and bystanders to possible injury or death. All accidents can be avoided!!! **DO NOT** modify the paver in any way without consulting the factory. Unauthorized modification may impair function and/or safety and affect the working life of the equipment.

ALLEN ENGINEERING CORPORATION assumes NO LIABILITY for accidents or injury incurred through the improper use of this equipment.

SAFETY ALERT SYMBOL

The Safety Alert Symbol identifies important safety messages written on the paver decals, as well as, in this manual. When you see this symbol, be alert to possible danger that could result in serious injury or death.

Note the use of key signal words in association with the Safety Alert Symbol:

DANGER - An immediate and specific hazard which will result in severe personal injury or death if the proper precautions are not taken.

WARNING - A specific hazard or unsafe practice which could result in severe personal injury or death if proper precautions are not taken.

CAUTION - Unsafe practices which could result in personal injury if proper precautions are not taken and as a reminder of good safety practices.

YOU are responsible for the safe operation and maintenance of your Allen Paver. You must ensure that you and anyone else who is going to operate, maintain or work around the machine be familiar with the operating and maintenance procedures and all related safety information contained in this manual.

SAFETY PRECAUTIONS

1. Always read and fully understand theOperator's Manual and the Safety Decals on the machine before trying to operate or service this equipment.
2. It is wise to have a first aid kit available and to be familiar with its contents.
3. Keep a "charged" fire extinguisher within reach whenever you work in an area where fire may occur. Also, be sure you have the correct type of extinguisher for your situation:
   Type A: Wood, paper, textile and rubbish.
   Type B: Flammable liquids.
   Type C: Electrical equipment.
4. Be sure to wear safe work clothing. It should be well fitted and in good repair. Do not wear rings, wrist watches or loose fitting clothing when working on machinery, they could catch on moving parts causing serious injury. Wear sturdy, rough soled work shoes, safety glasses and any other protective gear that is warranted by the work environment.
5. Keep work area organized and clean. Wipe up oil spills of any kind. Keep tools and parts off floor. Eliminate the possibility of a fall which could result in serious injury.
6. Be sure to reinstall safety devices, guards or shields after adjusting and/or servicing the machine.
7. After servicing, be sure that all tools, parts or servicing equipment are removed from the vehicle or engine.
8. **Do not get into a rush!** Use recommended hand holds and steps with at least three points of support when getting on and off the paver. Keep steps, floors, hand holds and controls clean and free of grease. Face the machine when climbing up and down and never jump off the paver or dismount while it is in motion.
9. Keep all personnel clear of augers, rollers and carriage frame when operating the paver.
10. Do not permit riders on the paver.

HYDRAULIC SYSTEMS PRECAUTIONS

1. Make sure that all components are in good working condition. Replace any worn, cut, abraded, flattened or crimped hoses and metal lines.
2. Do not attempt makeshift repairs using tape, clamps or cements. The hydraulic system operates under extremely high pressure and such repairs could cause serious injury.
3. Wear proper hand and eye protection when searching for a high pressure leak. Use a piece of wood or cardboard as a back stop instead of hands to isolate and identify leaks.
4. If injured by concentrated high pressure steam or hydraulic fluid, seek medical attention imedi ately. Serious infections or toxic reaction can develop from hydraulic fluid penetrating the skin.

REFUELING PRECAUTIONS

1. When refueling, keep the hose nozzle or the funnel and container in contact with the metal of the fuel tank to avoid the possibility of an electrical spark igniting the fuel.
2. Do not overfill the fuel tank - overflow creates a fire hazard.
3. DO NOT SMOKE when refueling and never refuel when engine is running.
4. Prevent fires by keeping the machine clean of debris, grease and spilled fuel.

SECTION 1 INTRODUCTION

Introduction

BATTERY PRECAUTIONS

1. Keep all sparks and flames away from battery, as gas given off by electrolyte is explosive.
2. If you come in contact with battery electrolyte solution wash off immediately.
3. Always disconnect the battery ground cable before working on the electrical system.
4. Do not tip battery more than 45 degrees to avoid electrolyte loss.

TRANSPORT PRECAUTIONS

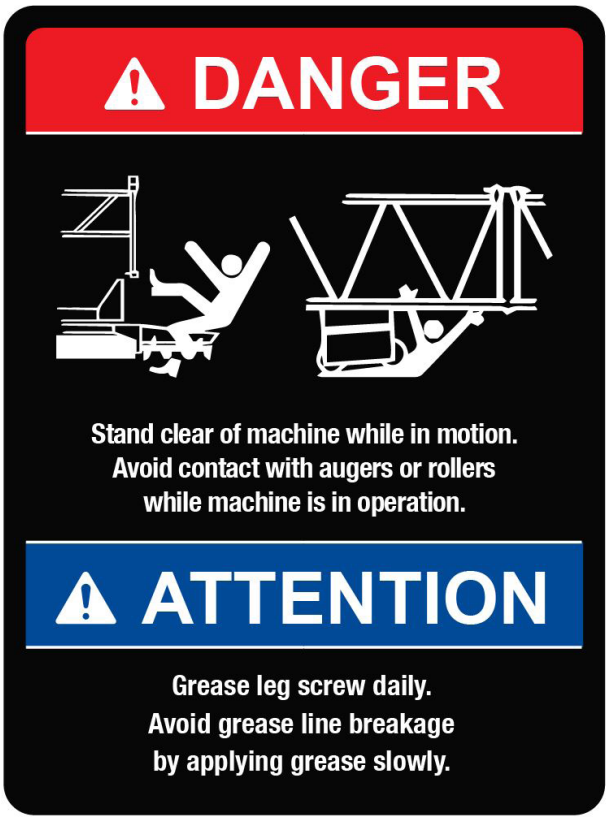
1. Consult the 6048 Operator's Manual before attempting to lift your paver. Use extreme caution when lifting the machine. Make sure that the lifting device has enough capacity to lift the weight of the machine. Check all lifting cables, chains, clevises, cable clamps and spreader beams for any damage. Use ropes tied to the ends of the machine to prevent the machine from spinning. Keep all personnel away from the machine while it is being lifted.
2. Always comply with local regulations regarding moving equipment on public roads and highways.
3. Make sure that all lights and reflectors comply with state and local regulations. Make sure that they are clean, in good working order and can be seen clearly by all overtaking and on-coming traffic.

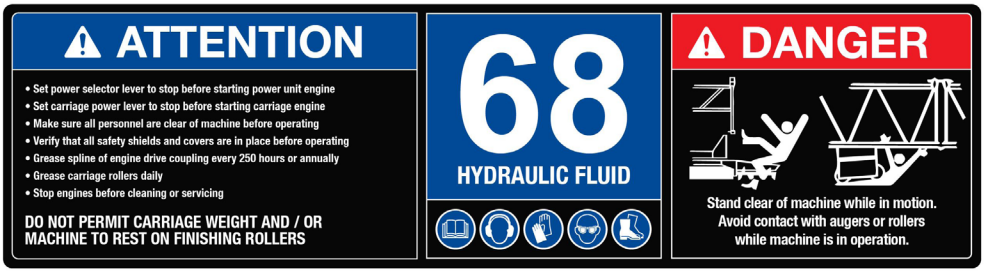
STORAGE PRECAUTIONS

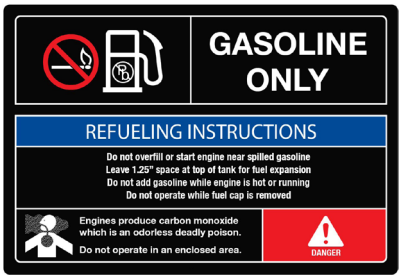
1. Store paver in an area away from human activity.
2. Do not permit children to play on or around the stored paver.
3. Make sure the unit is stored in an area that is firm, level and free of debris.
4. Store the paver inside a building or cover securely with a weatherproof tarpaulin.

SAFETY DECALS

1. Keep Safety Decals and signs clean and legible at all times.
2. Replace decals and signs that are missing or become impossible to read.
3. When replacing parts that previously displayed a safety decal, be sure to replace the decal as well.
4. Obtain Safety Decals or signs from the Allen Parts and Service Department.
5. Become familiar with the content and the position of each Safety Decal. Important information is written on the decals.







Federal / State Warning Regulations

⚠ WARNING

RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm.

SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica.

⚠ WARNING

Cancer and Reproductive Harm
www.P65Warnings.ca.gov

CALIFORNIA PROPOSITION 65 WARNING

Gasoline engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

Manual Tag Safety Detail

Safety-Alert Signs

This manual contains Safety-Alert Signs, as defined below, which must be followed to reduce the possibility of improper service damage to the equipment or personal injury. Read and follow all Safety-Alert Signs included in this manual.

NOTE defines an operating procedure, condition, etc. which is essential to highlight that contains useful or important information.

EMERGENCY is used for the identification of safety equipment, first aid, or emergency egress locations.

NOTICE used to convey safety information on labels and signs.

CAUTION is indicative of a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

WARNING Indicative of a potentially hazardous situations that could result in death or serious injury

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury

Spark Arrestor Notice

Some states require that in certain locations arrestors be used on internal combustion engines. A spark arrester is a device designed to prevent the discharge of spark or flames from the engine exhaust. It is often required when operating equipment on forested land to prevent the risk of fires. Consult the engine distributor or local authorities and make sure that you comply with regulations regarding spark arrestors.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
 	Rotating parts/crush hazards
	Pressurized fluid hazards
	Hydraulic fluid hazards

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety notes.

SECTION 1 INTRODUCTION

Operating Safety

⚠ WARNING

Familiarity and proper training are required for the safe operation of this equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls.

- **ALWAYS** read, understand, and follow procedures in the Operator's Manual before attempting to operate the equipment.

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.

- **NEVER** operate this machine while under the influence of drugs or alcohol.
- **NEVER** allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the risks and hazards associated with it.

- **NEVER** touch the engine or muffler while the engine is on or immediately after it has been turned off. These areas get hot and may cause burns.
- **NEVER** use accessories or attachments that are not recommended by AEC. Damage to equipment and injury to the user may result.

- **NEVER** operate the machine with the belt guard missing. Exposed drive belt and pulleys create potentially dangerous hazards that can cause serious injuries.
- **NEVER** leave machine running unattended.

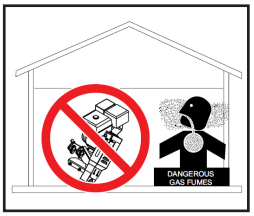
- **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.

- **ALWAYS** remain aware of moving parts and keep hands, feet, and loose clothing away from the moving parts of the equipment.
- **ALWAYS** close fuel valve on equipped engines when machine is not being operated.
- **ALWAYS** store the equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.

Engine Safety

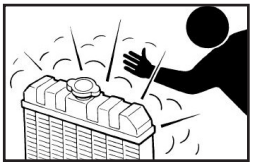
⚠ DANGER

Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine owner's manual and the safety guidelines below. Failure to follow the warnings and safety guidelines could result in severe injury or death.



- **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.

- **DO NOT** smoke while operating the machine.
- **DO NOT** smoke when refueling the engine.
- **DO NOT** refuel a hot or running engine.



- **DO NOT** refuel the engine near an open flame.
- **DO NOT** spill fuel when refueling the engine.
- **DO NOT** run the engine near open flames.
- **ALWAYS** refill the fuel tank in a well-ventilated area.

- **ALWAYS** replace the fuel tank cap after refueling.
- **ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

Service Safety

⚠ WARNING

Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

- **ALWAYS** disconnect the battery before servicing the equipment.

- **DO NOT** attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.
- **DO NOT** crank a flooded engine with the spark plug removed on gasoline-powered engines. Fuel trapped in the cylinder will squirt out the spark plug opening.

- **DO NOT** test for spark on gasoline-powered engines if the engine is flooded or the smell of gasoline is present. A stray spark could ignite the fumes.

- **DO NOT** use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.
- **ALWAYS** turn engine off and remove key from machine before performing maintenance or making repairs.

- **ALWAYS** handle blades carefully. The blades can develop sharp edges which can cause serious cuts.
- **ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.
- **ALWAYS** replace worn or damaged components with spare parts designed and recommended by AEC Corporation.
- **ALWAYS** disconnect the spark plug on machines equipped with gasoline engines, before servicing, to avoid accidental start-up.

- **ALWAYS** relieve all pressure in the air, oil and cooling systems before disconnecting any lines, fittings or related items. Escaping fluid under pressure has sufficient force to penetrate skin causing serious personal injury, DO NOT check for leaks your hands.
- **ALWAYS** switch off the power supply at the battery disconnect before adjusting or maintaining the electrical equipment.
- **ALWAYS** keep the machine clean and labels legible. Replace all missing and hard-to read labels. Labels provide important operating instructions and warn of dangers and hazards.

- **ALWAYS** wear rubber gloves to avoid personal injury, when you treat fluids used in machine. In case of contact with skin, immediately wash off.

ALWAYS DO A THOROUGH INSPECTION OF THE SLINGS, CHAINS, AND HOOKS BEFORE ATTEMPTING TO LIFT THE MACHINE!

OSHA has set forth guidelines which detail the use of Rigging Equipment for Material handling. This guideline is found under

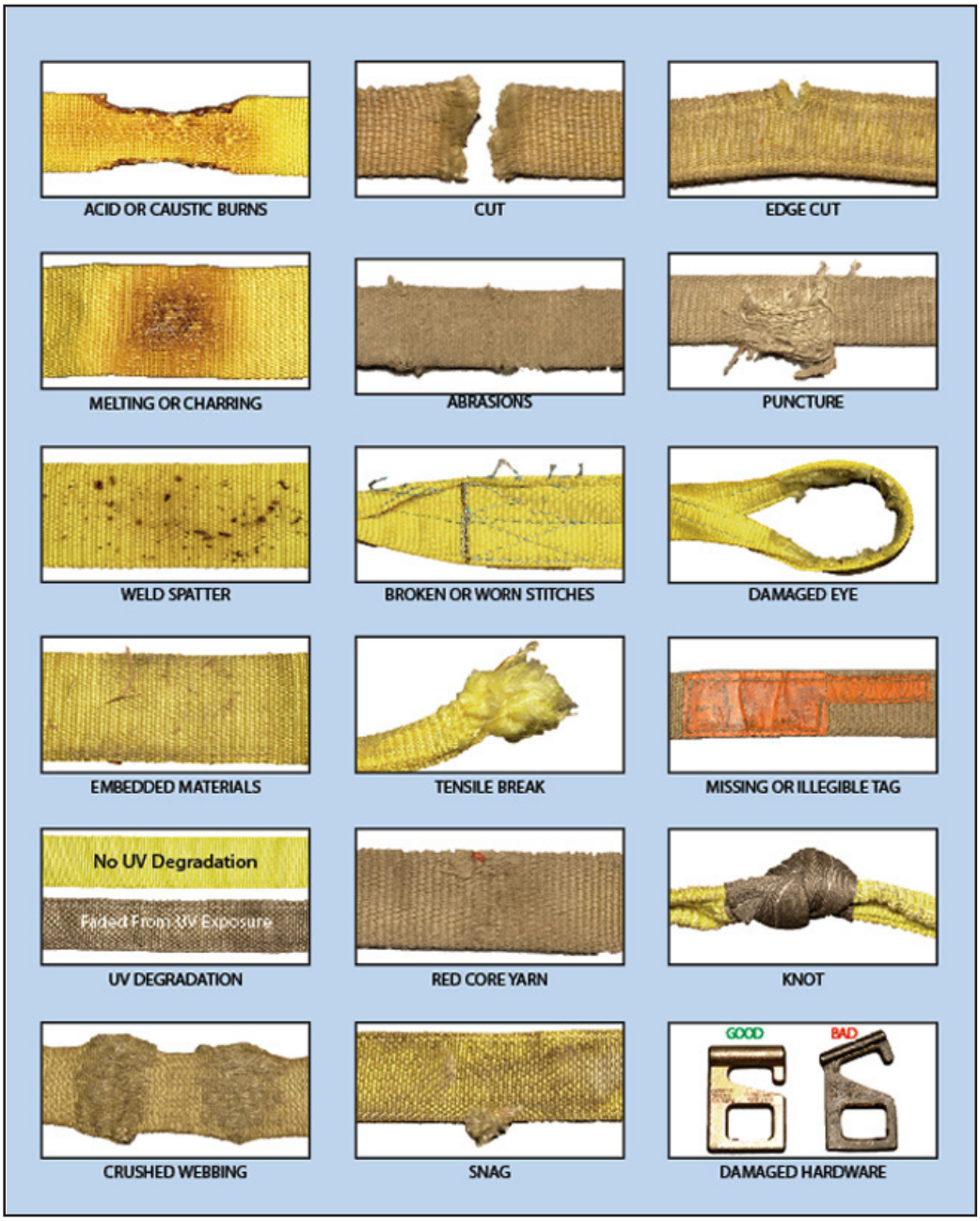
OSHA Standard Number: 1926.251

Please read and follow all guidelines found in this standard.

Removal from service.

Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

OSHA 1926.251(e)(8)



SECTION 1 INTRODUCTION

Dealer Information & Ordering Parts

Your Dealer has Allen Engineering Corporation trained mechanics and original Allen replacement parts. Always contact the Allen Dealer who sold you this machine for Allen Certified repairs and replacement parts.

Place Allen Dealer information below for future reference.

Dealer Name: _____

Phone #: (____) -____- _____

Address: _____

City:_____ **State:**_____ **Zip:**_____

Salesman:_____ **Mobile Phone:**_____

Additional Comments:_____

_____

_____

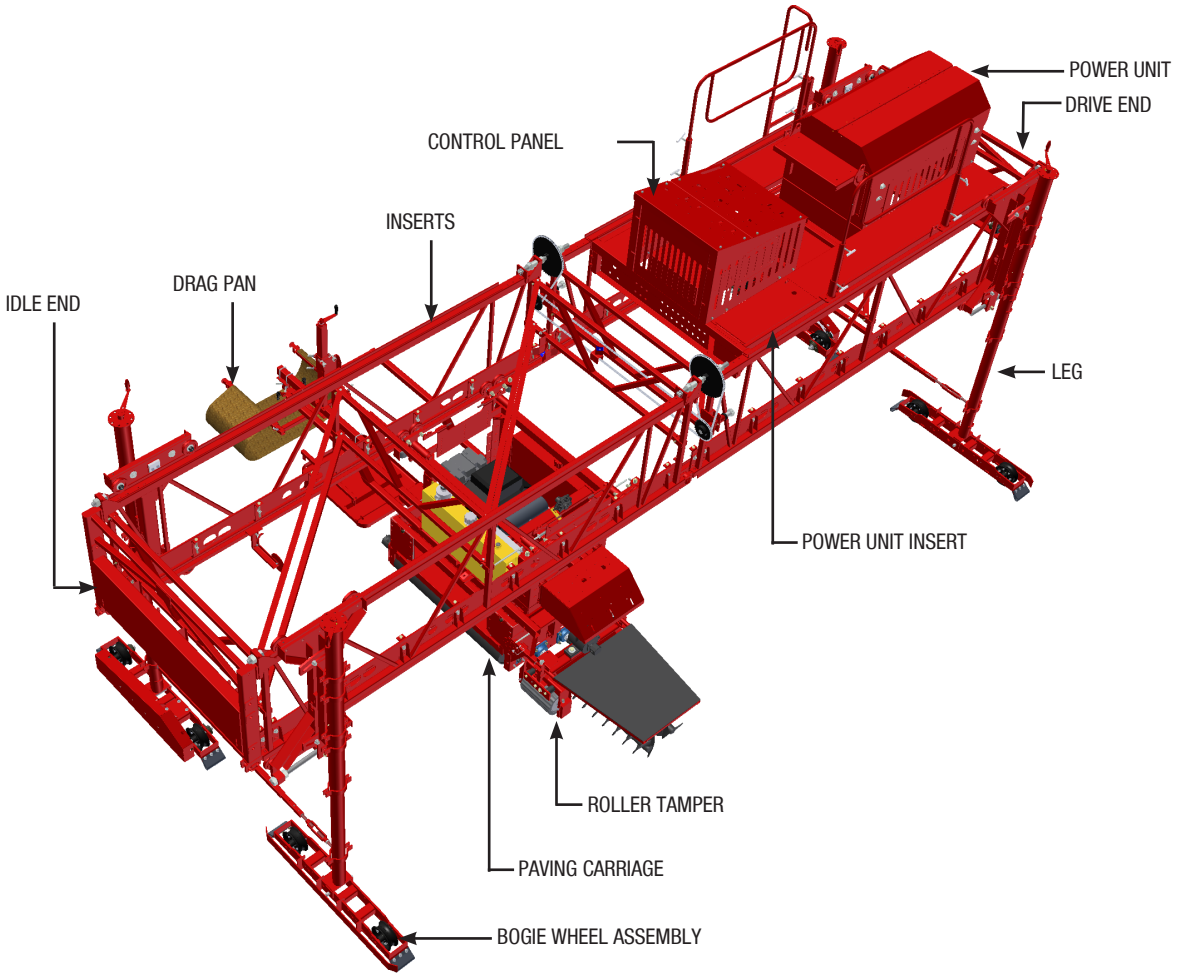
_____

NOTE

ALL INFORMATION, SPECIFICATIONS, AND ILLUSTRATIONS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE AND ARE BASED ON THE LATEST INFORMATION AT THE TIME OF PUBLICATION.

The "PARTS & DECALS MANUAL" contain illustrated parts lists for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.
2. Include correct description and part number from the "PARTS & DECALS MANUAL"
3. Specify exact shipping instructions, including the preferred routing and complete destination address.
4. **DO NOT** return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.
5. When placing an order, please contact the AEC dealer nearest you.



PAVER COMPONENTS

A. Machine Frame

The 6048 Paver Frame is constructed from welded steel for maximum strength and light weight. Standard frame insert sections are 3, 6, 12, 15, and 18 feet long. The machine can be extended to a maximum of 120 feet. Consult the factory when spans are in excess of 120 feet. Special length insert sections are available and can be ordered from the factory. The machine is equipped with crown adjusting bolts at each insert joint. The machine has 6" diameter, heavy duty legs and hydraulically driven bogie travel assemblies. A variety of bogie wheel types and sizes are available from the factory. The machine direction is controlled by the dual chain controller located at the drive end of the machine. The machine automatically moves forward after each pass of the paving carriage.

B. Stationary Power Unit

Power is supplied by a 23.5 HP Kohler Gasoline Engine. The machine is equipped with a 12 volt electric starting system. All power functions are hydraulically driven. The stationary power unit drives the Bogie Travel Wheels and the Carriage Travel Speed and Direction.

C. Paving Carriage

Power is supplied by a 23.5 HP Kohler Gasoline Engine and with a 12 Volt electric starting system. All power functions are hydraulically driven. The paving carriage is equipped with dual finishing rollers and dual augers suspended from a rigid, light weight tubular frame. The finishing rollers are mounted on a skewable turntable and automatically reverse rotation after each pass. The dual augers plow excess concrete forward while moving in either direction. The augers and the finishing rollers can be adjusted up and down for optimum performance. The paving carriage includes a single drag pan with a burlap texturing cloth.

D. Paver Options

The 6048 Paver can be equipped with a variety of optional components. Contact the factory for additional information.

SECTION 2 CONTROLS

Controls

PAVER CONTROLS

Before starting engines read the engine starting instructions and all warning decals located on the operators console and at other key points on the machine.

Both carriage travel and machine travel are controlled from the operator's control console. Optional accessories are also controlled from the control console.

A. Manual Carriage Directional Control - Can be used to change the direction of the carriage travel. When the Carriage Directional Control is moved in either direction from the center position the carriage travel speed begins to slow down. To reverse the direction of the carriage travel move the control all the way in the direction of the desired travel. Move the control lever with a smooth, steady motion to avoid jerky carriage travel starts and stops. An alternative method to reverse travel is to stop the carriage travel using the Power Selector Control. Move the Power Selector Control to the "Stop" position. Reverse the carriage travel by moving the Carriage Directional Control in thedesired travel direction and then return the Power Selector Control to the "Pave" position.

CAUTION: When the Carriage Directional Control is manually HELD in either direction the carriage will continue to travel if (A) the Power Selector Control is in the "Pave" position, (B) the Machine Travel Direction Controls are engage and (C) the Machine Travel Speed Control is not set at zero.

B. Power Selection Control - The power selection valve has three functions, Pave, Stop and Travel. To avoid jerky carriage travel, slowly ease the control to each new position. In the "Pave" position the carriage will move back and forth across the machine truss. The "Pave" position supplies power to the carriage travel drive and provides power for the automatic machine travel drive. The machine travel drive will be actuated each time the carriage automatically reverses direction.

CAUTION: Before engaging carriage travel be sure that all personnel are clear of the paving carriage. The paving carriage will not automatically reverse direction of travel when it reaches the end of the machine unless the carriage travel reversing lugs are installed on the carriage travel chain. For instructions on setting the reversing lugs see Section III - "Set-up" Instructions.

The "Stop" position is used when starting the Power Unit Engine and to automatically stop all functions. The "Travel" position is used for manually moving the machine in either the forward or the reverse direction.

C. Carriage Speed Control - The Carriage Speed Control determines the speed of both the paving carriage and any accessories installed on the unit. This valve controls the amount of hydraulic oil going to any one of the control valves on the operator's console. The zero (0) setting being no oil flow to the valves and the ten (10) setting being full flow to the valves. Keep the Carriage Speed Control scale setting at 10 (maximum) except when slowing the paving carriage or when operating an accessory. When the Carriage Speed is set at 10 the Accessory Speed will be set at 0. To operate the carriage and an accessory concurrently set the control at the midpoint of both scales (5). The paving carriage speed is variable from 0 to 120 Ft/Min.

D. Machine Travel Direction Control - The Machine Travel Direction valves control the forward or reverse travel of the machine. The two control levers control the drive bogie on the drive end of the machine and the drive bogie on the idler end of the machine. With separate controls for each end, the machine is capable of steering around a radius.

E. Machine Travel Speed Control - The Machine Travel Speed Control can be used in either a manual mode or an automatic mode. The manual mode is used to move the machine without activating the paving

carriage.

Manual Mode:

1. The Carriage Speed Control setting should be at the 10 position on the scale.
2. BOTH Machine Direction Controls need to be in either the forward or reverse position.
3. The Power Selector Control should be in the “Travel” position.
4. When the Machine Travel Speed Control is eased off of the “0” position the machine will start to move.

Automatic Mode:

1. The Carriage Speed Control should be off the “0” position. The higher the setting the faster the paving carriage will travel through the machine truss.
2. BOTH Machine Direction Controls need to be in either the forward or reverse position.
3. The Machine Travel Speed Control should be set off “0”. The higher the setting the longer the advance will be when the carriage stops and reverses direction.
4. Ease the Power Selector Control to the “Pave” position. The paving carriage will travel across the truss and slow down and shift directions. At the same time the machine truss will advance forward. The length of advance depends on the Machine Travel Speed Control setting. The automatic machine advancement is variable from 0 to 15 inches with each carriage pass.

F. Carriage On/Off Valve - The hydraulic power required to drive the rollers and the augers is controlled by the Carriage On/Off Valve. The Valve is located on the Carriage Control Console. (See Figure 3).

G. Roller Direction Valves - The Directional Valves will allow the rollers to rotate to the right, remain in neutral or rotate to the left. The operator should choose his or her preferred setting before the initial carriage pass and push the levers to the up, middle or down positions.

H. Automatic Roller Reversing Valve - The Automatic Roller Reversing Valve has two positions. When the handle is turned to the Non-Reversing position (left) the Directional Valves will continue to control the direction of the roller rotation. When the handle is turned to the Reversing position (right) the rollers will reverse their rotation just before the carriage ends its pass and reverse its direction on the truss.

I. Carriage Lift Valve (Option) - Lifts and lowers carriage.

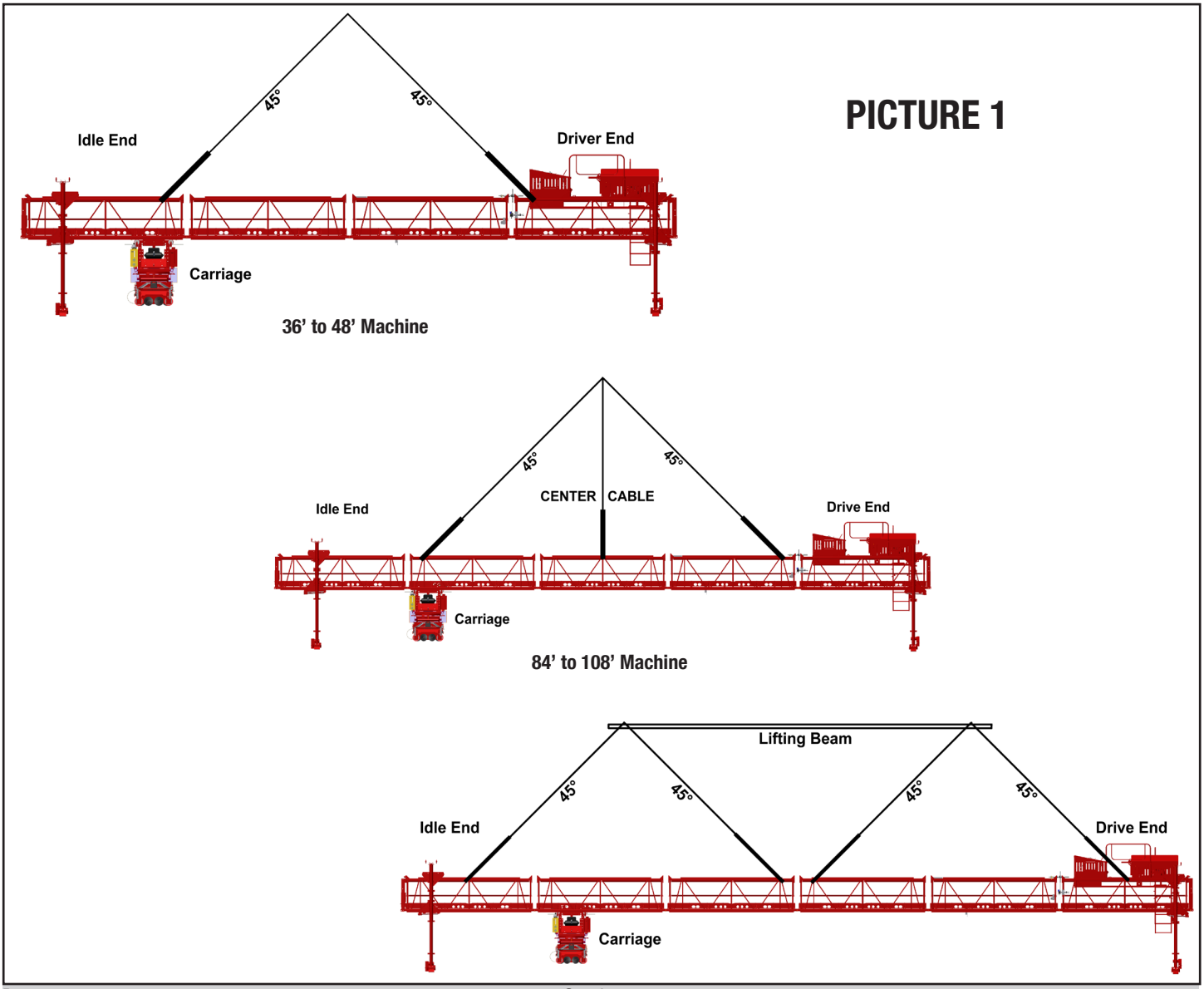
J. Roller Tamper Speed Control - Located on the RollerTamper frame. Controls the vibration speed of the Roller Tamper. The vibration frequency ranges from 0 to 6000 VPMS.

When Lifting Your Machine

WARNING

- Please use extreme caution when lifting the BDF. Make sure crane or lifting equipment has enough capacity to lift the weight of the machine. Please make sure all lifting apparatus, straps & cables are free from structural damage and are rated for the proper lifting capacity.
- Please make sure all ground personnel are clear of danger while the machine is being lifted.
- **LOCK** all (4) legs prior to lifting the machine as they could roll causing an unbalanced load and personal injury.
- **ALLOWING** the weight of the machine to rest on the carriage paving rollers **WILL** cause damage to the carriage or the paving rollers, **ALWAYS** place blocks under end-frame
- **ALWAYS** attach **LONG** safety ropes or tag lines to the ends of the machine prior to lifting.
- Position the paving carriage opposite the power unit end to provide a balance lift for the machine.
- Lifting straps are provided. Please be aware of the lifting capacity for all straps.
- Lifting angles should not be less than 45° from horizontal. **SEE PICTURE 1 BELOW**
- If using a center cable, **CAUTION** should be taken when adjusting the length.

PICTURE 1



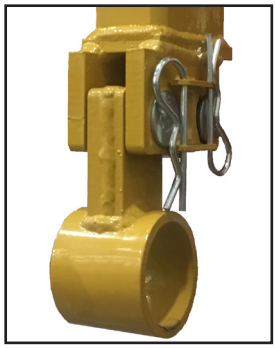
When Loading & Transporting Your Machine

- CHECK all height restrictions prior to loading the machine as all Drop-Deck trailers and flat-bed trailers have different dimensions. Paving Carriage may need to be removed for legal transport. Tighten the leg clamps on the four legs (SEE PICTURE 2).
- DO NOT secure the BDF to the trailer over the truss frame in the center of the machine. Use the tie-down loops on the end frames (SEE PICTURE 3) of the machine using chains.
- Tighten the chains by pulling towards the center of the machine.
- When loading **with** Bogie Wheel Frames attached to the legs – **IT IS IMPORTANT** to keep the frame & bogies elevated above the trailer bed. Multiple 2 x 4's or a 4 x 4 block needs to be place in between the bogie wheels and under the bogie frame (SEE PICTURE 4). Screw or nail the wood to secure it to the truck bed.
- When loading **without** Bogie Wheel Frames - Place multiple 2 x 4's or a 4 x 4 the width of the trailer under the leg yokes on both ends of the machine (SEE PICTURE 5). Secure the wood by screwing or nailing it to the truck bed.
- When loading the machine with the Paving Carriage attached - block the carriage so that the machine or carriage weight does not rest on the paving rollers. Place the blocks under the end frames of the carriage and nail them to the deck. (SEE PICTURE 6). With the carriage frame now setting on the blocks, adjust the hold down rollers, located on the carriage hanger frame at the top of the carriage, to the lowest position. Using the leg cranks or power leg option, lower the machine just enough so that the carriage rollers are not tight against the carriage rail. This allows movement of the machine truss while transporting and will not cause damage to the carriage rail. If the paving carriage is loaded separately, block the carriage in the same manner under the end frame and secure the carriage to the truck.

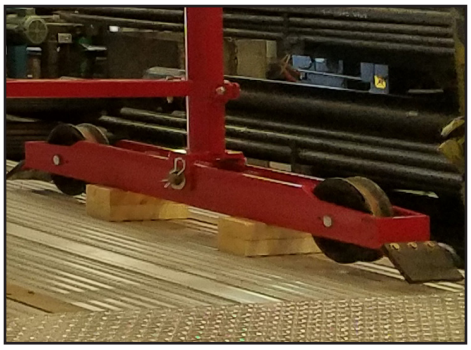
PLEASE NOTE: Whether transporting with or without carriage, the carriage rollers cannot rest on the trailer bed and need to be blocked under the end frames.

Picture 2

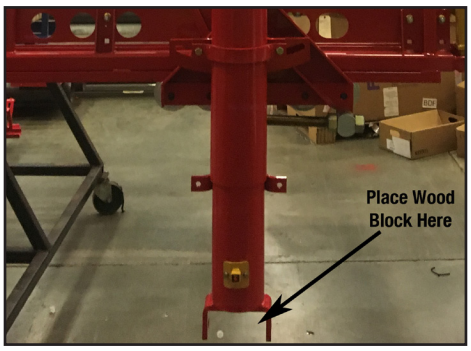
Picture 3



Picture 4



Picture 5



Picture 6

Placing Screed Rail & Paving Forms

The screed, pipe rail, and concrete paving forms provide the longitudinal profile of the paving surface and the proper set-up is as equally important as the machine operation.

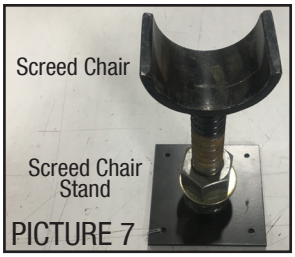
- The set-up is what determines the longitudinal profile of your roadway paving or bridge deck surface.
- There are two screed rail setups for bridges. The engineer or DOT specifications will determine if the BDF will ride on the pipe located on the edge forms or on the pipe located on the bridge girders.

FIRST TYPE OF BRIDGE DECK SET-UP:

- Look at the type and spacing of the overhang brackets if the machine is riding on forms and refer to the manufacturer's specifications for size of overhang brackets and spacing. **Consult with the factory about your machine weight and wheel loads.**
- Once the BDF loads have been determined, THIS will dictate placement of the Screed Rail.
- The Rail position must be accurate and conform to the grade required. Allen Engineering recommends 2-inch schedule 80 pipe with a sleeve at one end to connect two sections of pipe together.
- 24 inches on center is the recommended spacing for the screed chairs. (Special situations may have a maximum 30 inches).
- The rails and chairs should be double checked after placing the machine on the deck.
- After the BDF has been set on the deck, it will need to run up and down to take out any timber crunch or settling of the form work.
- Double check the form-work again.

SECOND TYPE OF BRIDGE DECK SET-UP:

- When the machine is riding on bridge girders you will need to fabricate a screed chair stand that will be epoxied or welded to the beam or a girder plate (SEE PICTURE 7)



PICTURE 7

- We recommend you tie the vertical tube to the rebar mats for stability.
- The top of the vertical tube will be below the finished surface grade.
- The screed rail needs to be adjusted to conform to the longitudinal profile which can be accomplished in various ways.
- A folding ruler or tape measure with the use of a level can be used to determine the quarter points on the deck to the top of the screed rail.
- Pulling a string-line between the 2 points or measuring from the grade-line on the form to the top of the screed pipe to set the grade of the pipe.
- Remember this is just an initial setup at this time and the rails and chairs should be double checked after placing the machine on the deck.
- Double check the form-work again.

PAVING FORM SET UP:

- A strong solid sub-base is required for all concrete paving forms to sit on to prevent the paving forms from sinking into the sub-grade causing an improper grade profile.
- Allen recommends our Steel Forms or forms designed and engineered to carry the weight and load of the paver. The BDF will be outfitted with flat flange poly-bogie wheels with a 3-inch width to ride on the top of the paving form.

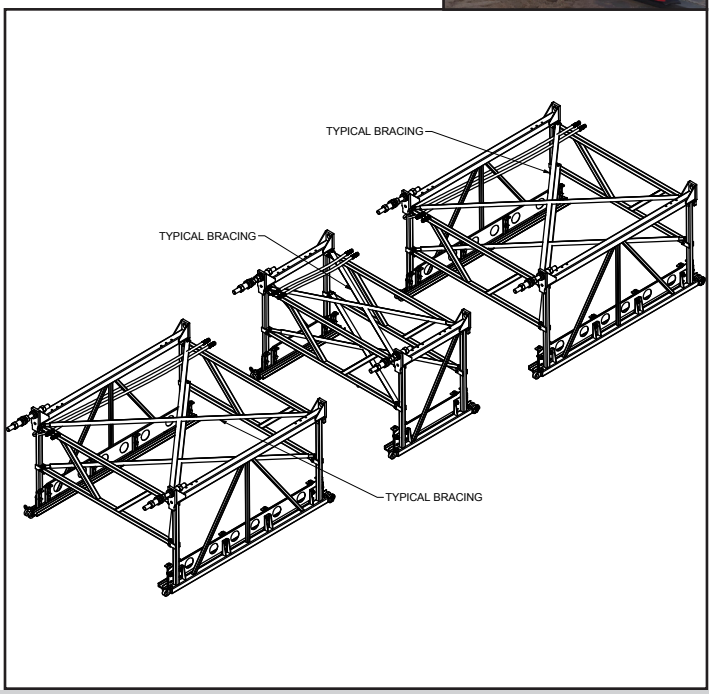
BDF Assembly & Set-up

Your BDF assembly process can be performed by a 2-3 person crew with the help of an Allen Field Technician. Typically: one operator and two ground people. A crane or capable lifting device will be required, along with an impact tool, crescent wrenches, socket set and various hand tools for the nuts & bolts assembly. Depending on the complexity of the project, this can/may take 1-3 days.

INSERT ASSEMBLY

- A level working area is required and necessary for the proper assembly of your BDF in a safe working environment.
- Know where your crown is located and what insert sizes will be needed for the proper assembly.
- It may be required to assemble additional inserts separately.
- Always move the carriage to the power unit side when adding additional inserts.
- To reduce machine frame stress, when extending to lengths greater than 55'-60', install the smaller size inserts (3', 4' 5' 6' 7', 8' 9' etc…) on the two end sections of the machine.
- Loosen the chain tightener to disconnect the carriage travel chain and also remove the chain master link, then pull the chain over the top of the idler sprocket, roll up the chain to keep from tangling and place it near the paving carriage.
- Roll up the hydraulic hoses that stretch across the top of the machine for the travel bogies & power legs on the idler end of the machine and place near the power unit end
- Additional frame inserts are added to the machine after splitting the machine at the hinge point of the power unit section.
- The power unit end needs to be supported at the hinge point some type of support which could be constructed with scaffolding, barrels, I-beams etc.
- **PLEASE MAKE SURE the power unit end is secure and stable and the support is strong enough!**
- Attached lifting straps to the idler end of the machine and remove the crown bolts at the top of the truss frame and the hinge pins on the bottom of the truss frame and can be placed out of the way for additional assembly.
- Add the required insert sections for proper length & deck layout on the power unit insert and connect the idler end section of the machine.
- Lubricate the crown bolt when attaching the inserts together.

CAUTION - Prior to removing the paving carriage chain PLEASE secure the carriage by attaching vise grips on each side of the carriage rail rollers. This will prevent the carriage from moving when the chain is removed when adding additional inserts.



BDF Assembly & Set-up

INSTALLING/REMOVING THE PAVING CARRIAGE – At times it is necessary for transport, different paving direction or winter storage to remove the carriage from the machine frame.

- With the paving carriage frame resting on wood blocks remove the carriage hanger frame bolts and move the machine clear of lower paving carriage.
- Move the BDF over the top of the lower paving carriage so that the hanger frame is centered over the (4) carriage hanger frame bolt holes.
- Using the leg cranks or power legs, lower the machine down until the bolts are seated in the nuts
- Adjust the bottom thrust or hold down rollers that the rollers can turn easily by hand.
- The carriage chain will prevent the carriage from moving when the BDF is lifted onto the pipe rails.
- Once the carriage travel limits have been determined install the reversing paddles.

IF BOGIES WERE REMOVED FOR TRANSPORT:

- Raise the machine high enough to install the bogie frames onto the yokes at the base of the machine legs.
- Install the drive bogies on the rear side and the idler bogies on the front side of the machine
- The power bogie drive chain protection shield should be on the outside, but can be placed on the inside, depending on clearance.
- **PLEASE MAKE SURE all hoses are connected so that the direction of machine travel is as indicated on the control console.**
- It may be necessary to reverse the hose connections to correct the direction of travel.

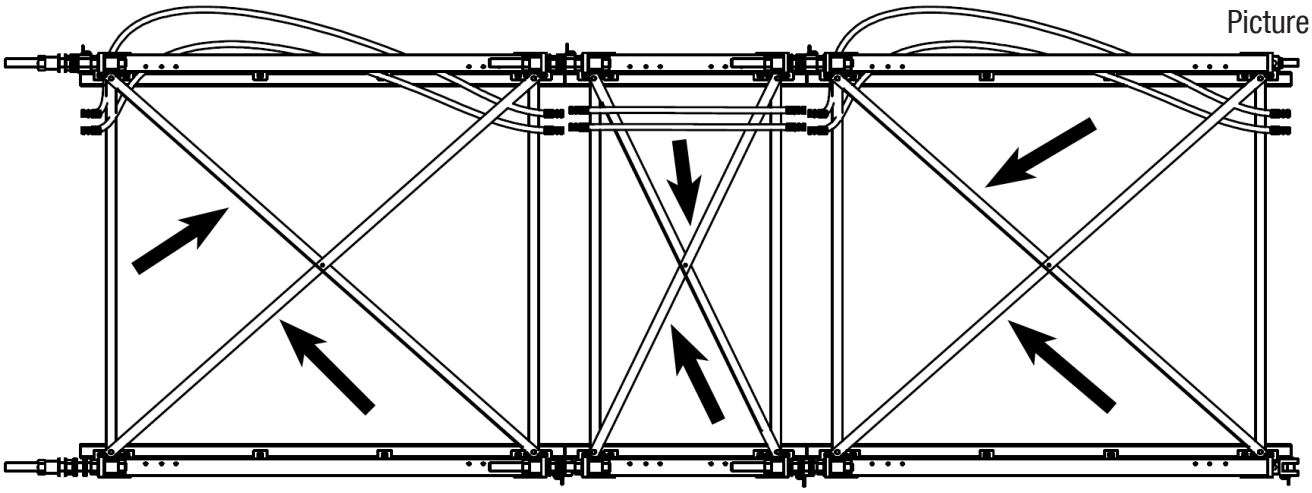
MACHINE LEG ADJUSTMENT

- Adjust the machine leg distance to match the center to center distance between the pipe rails.
- Check and adjust the height of the legs so that the paving carriage will clear the deck rebar when the machine is placed on the rails.
- Check and adjust the height of the legs so that the BDF frame will clear the barrier rebar when the machine is placed on the rails.
- Position the bogie wheels for clearance of any reinforcing steel.

SQUARING TRUSS

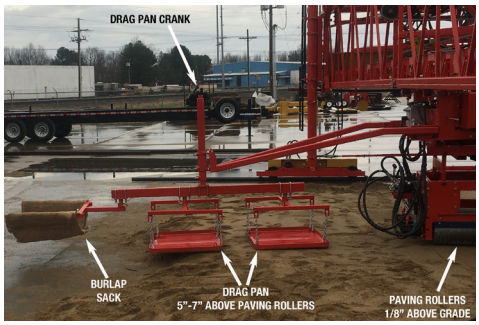
- After the machine has been placed on the pipe rails move the carriage to the center of the machine truss.
- All four legs of the machine must be set to the same height to assure that the truss does not have a twist.
- Measure the distance between the bottom or top of the carriage rail and the top of the screed rail or paving form.
- Adjust the height using the machine leg cranks or power up/down until all four corners are equal. SEE PICTURE 9

Picture 9



DRAG PAN INSTALLATION

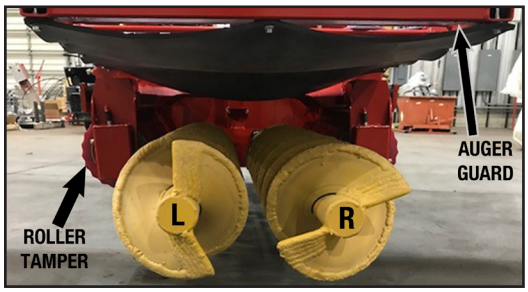
- Attach the drag pan hanger bracket to the upper carriage mount on the top of the paving carriage
- Assemble the drag pan & burlap drag.
- Adjust the angle of the rectangular mounting tube so that it is straight.
- Using the crank handle, adjust the “H” Frame of the drag pan so that it is 5” to 7” above the bottom of the paving rollers.



- Attach the drag pan chain links even into the bracket on the fifth link (SEE PICTURE).
- Pivot the carriage so the tube is parallel to the centerline of the deck and adjust the bolt so that it holds the tube parallel as it travels across the deck.
- Repeat procedure with the carriage pivoted in the opposite direction and tighten the jam nuts to hold bolts in place.

AUGER INSTALLATION

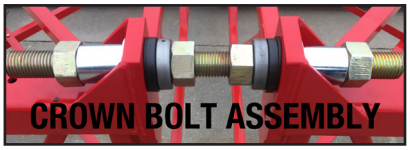
- GREASE the auger shafts and slide the augers onto the shafts.
- Looking at the front of the carriage, slide the clockwise auger onto the right-hand shaft and the counter clockwise auger onto the left-hand shaft.
- Tighten auger hardware and mount the safety auger guard assembly (SEE PICTURE).



- Turn the auger adjusting crank and set the augers 1/8” to 1/4” above the bottom of the paving rollers as a starting point.
- **NOTE: Grease the auger shafts.**

STRAIGHTENING THE MACHINE

- When the attachments have been installed on the paving carriage, maximize machine weight by filling the gas and hydraulic tanks.
- Be sure that the paving carriage has been moved to the center of the machine to align and straighten the machine frame.
- Adjust the gap in between the frame sections by raising or lowering the machine truss by adjusting the crown bolts so that the distance matches top and bottom, also use line of sight or a string-line to make sure frame is straight. (SEE PICTURE)
- With the manual crown adjuster, both sides of the truss can be adjusted on either side by turning the nut SEE PICTURE).



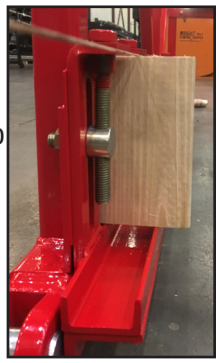
BDF Assembly & Set-up

STRAIGHTENING CARRIAGE RAIL

- For string-lining the carriage rail, use nylon masonry line.

DANGER: USE ONLY STRING-LINE PROVIDED WITH BDF

- Attached the string-line from eye bolt to eye bolt on each end of the BDF. These are located at the base of each end panel. DO this step for both sides of the frame.
- Tighten the string-line by pulling it taut with no sag. It may be necessary turn the eye-bolts to gain additional tension on the string (NO SAG)
- The carriage rail adjuster lock nuts need to be loosened to allow movement of the carriage rail. CAREFUL not to make them too loose.



- You will need (4) - 2" x 6" wood blocks, use the factory edge for the string-line to rest on & the other factory edge resting on the carriage rail (SEE PICTURE).
- Any number of items can be used to check the carriage rail height to the string-line – Wood block, chamfer strip, grade stake.
- Adjust the carriage rail holder bolt up or down so that the carriage rail matches the same height across the frame.
- When the carriage rail adjustment has been completed and looks straight, tighten all of the carriage rail locknuts. SAME ON BOTH SIDES.

SQUARING THE PAVING CARRIAGE

- Make sure that the lower carriage slide blocks make contact with the upper carriage skew ring and there are no gaps. MAY NEED SHIMS.
- Make sure that the lower carriage is in the down position and look at the blocks against the ring.
- If there are gaps, remove the cotter pin and turn the castle nut located under side of the upper - lower carriage. Also check for wear on the slide blocks, may need replacing.
- After starting the engine, engage the on/off lever to shift the lower carriage by manually pushing or pulling the reversing valve rod.
- Adjust the turntable pivot nut until lower carriage pivots freely and there are no gaps, shut off the engine and replace the cotter pin in the castle nut.
- Align the paving rollers so that they are parallel with the upper carriage.
- Use a level, metal bar or string-line across the top of each side of the upper carriage from carriage rail to carriage rail.
- Place a 4'-6' long straight edge or level across the top or the bottom of both ends of the paving rollers.
- Measure the distance from the top of the carriage rail to the bottom of the paving roller, which is top of concrete grade and make sure this is the same on all 4 roller corners.

ADJUSTING THE PAVING ROLLERS

- To adjust the elevation of the paving rollers, ONLY loosen the bolts on the front of the carriage holding the roller bearing.
- Also, ONLY loosen the bolts that support the motor mount plates on the back of the lower carriage.
- Using a tape measure or wooden ruler, measure down from the string-line to the top of the straight edge or level.
- The distance must be the same at all four corners.
- Adjust the elevation of each roller end by turning its adjuster bolt clockwise to raise and counter clockwise to lower.
- When all four corners are equal, the paving rollers will be parallel with the carriage rail.
- Tighten all loose mounting bolts.
- Use the auger adjusting crank and reset the augers to 1/8" to 1/4" above the bottom of the paving rollers.

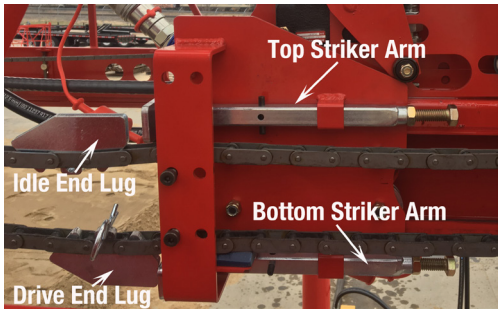
ROLLERTAMPERS

- The roller tamper drums are used to consolidate the top surface of the concrete with the desired density.
- It helps to seal hard to finish concrete with harsh mix designs and low slumps.
- It may also help to seal when dealing with wind exposure, causing abnormal surface drying and unforeseen delays in the concrete delivery.
- Place a 4'-6' level under the paving rollers and under the roller tamper drum to check the elevation.
- Loosen the locking set screws and the lock nuts for the drum adjustment on both sides of the roller tamper with the front and back set to grade.
- The drums can be adjustable from 1/2 inch above concrete grade to 3/4 inch below concrete grade.

- The depth and penetration required will vary according to job specifications.
- Pitching the front end of the drum higher allows the roller tamper to remain parallel to the concrete surface when the rear of the machine is raised at the beginning of the pour, with the max recommended depth is 3/16 inch.

CARRIAGE TRAVEL DISTANCE

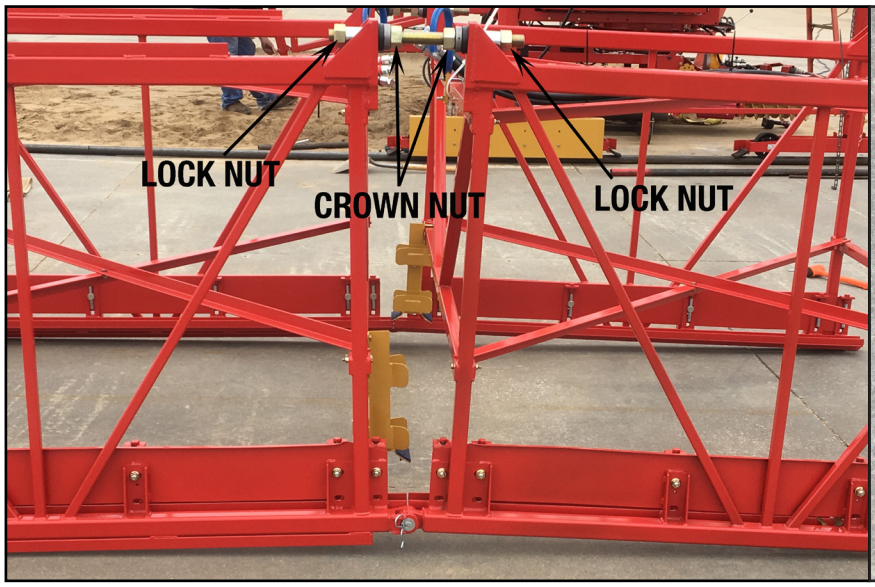
- Adjust the carriage travel distance by positioning the chain lugs on the upper and lower travel chains (SEE PICTURE).

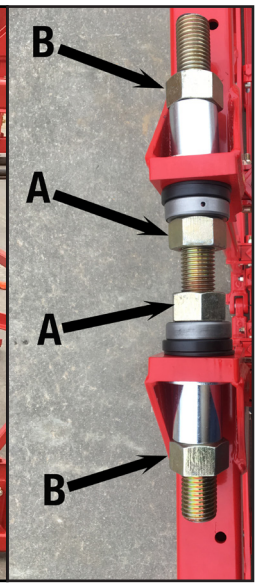


- Manually push with your hand, the top striker plate of the shifter until the reversing valve shifts. Manually push with your hand, the bottom striker plate of the shifter until the reversing valve shifts. Do this for both directions of carriage travel.
- Place the paving carriage at the desired travel distance at the idler end of the machine and stop the carriage. Hold back the striker plate and attach the chain lug next to the striker plate on the top of the travel chain.
- Place the paving carriage at the desired travel distance at the power unit end of the machine and stop the carriage. Hold back the striker plate and attach the chain lug next to the striker plate on the bottom of the travel chain.
- Once the chain lugs have been installed, to set the paving carriage pivot shift movement on the idle end, slide a striker target or shifter paddle onto the carriage rail at the desired point the carriage needs to shift.
- After the shifting rod makes contact with target, the paving roller reversing valve will not engage at this time, TO ENGAGE the shift in the reversing valve, move the paddle approximately 1”- 2”, until the rod spring shifts the reversing valve and the lower carriage shifts.
- Tighten the T-Bolt to lock the Striker target or shifter paddle in place.
- **REPEAT the previous 3 steps for the power unit side of the machine.**
- The bottom thrust rollers on the hanger frame, positioned under the carriage rail can be tightened so that the rollers have a slight pressure on the carriage rail, allowing you to turn them by hand.

MANUAL / POWER / CROWN BOLT ADJUSTMENT

- The insert frame section hinge point or truss connection should be positioned on the machine to coincide directly above the crown center.
- The paving carriage should be moved to the crown position, allowing for deflection of the truss frame with the full weight of the carriage.
- Note the measurement from a grade point on the deck to the top of the carriage rail on both sides of the machine.
- The manual/power/crown bolts can be adjusted for the machine frame slope to the specified deck crown or center grade slope (1.5%,2%, 2.5%...).
- For the crown bolts, adjust them ½” at a time and alternate sides (SEE PICTURE) which allows a slight shift with the angle change.
- Loosening lock nuts “B” on both sides, allows you to adjust the crown nuts “A” and vice versa..

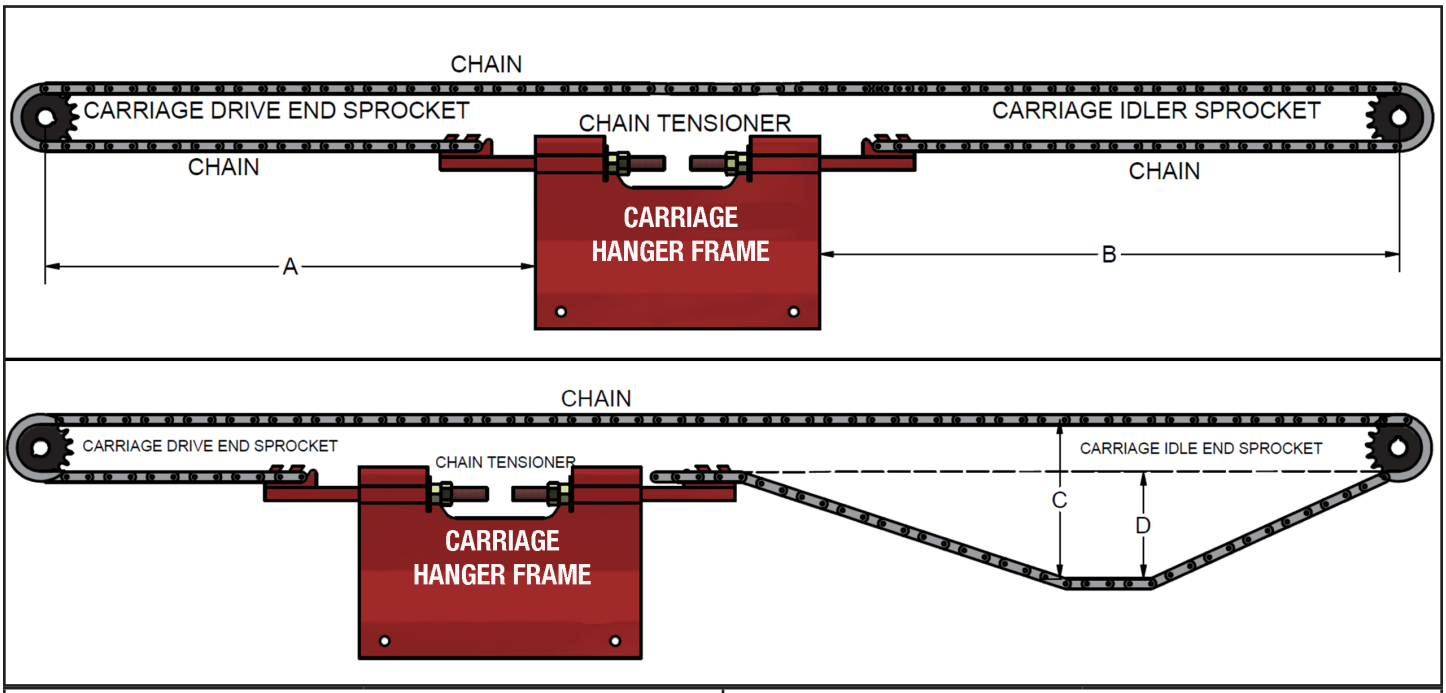




BDF Assembly & Set-up

CHAIN TENSIONING

- The chain tightener on the paving carriage is used to equalize the tension of each the 2 carriage travel chains (SEE PICTURE).
- Make sure paving carriage is “square” with the carriage rails.
- With dual chain machines, run the carriage to the power end of the machine and verify that the distance between the carriage frame and the carriage travel shaft & sprocket teeth (Dimension “Y” & “Z”) is the same at each chain.
- To keep the carriage square, adjust the side thrust rollers.
- When determining the amount of chain sag, position the carriage to one end of the machine and measure the space between the bottom and top chain in the center of the machine on both sides (SEE PICTURE).
- Our recommendation is the chain sag should not be less than the distance for dimensions “1” and/or “2” shown below.
- Too tight and excessive chain wear may result. Too slack and excessive sprocket wear and/or improper carriage reversal may result. NOTE: dimensions are for a FLAT machine.
- Adjust for machines with a crown.



4836B DIMENSION “1”		6048B DIMENSION “2”	
Chain Span	**Minimum Chain Sag**	**Chain Span**	**Minimum Chain Sag**
40 Feet	7 Inches	40 Feet	3 Inches
60 Feet	9 Inches	60 Feet	5 Inches
80 Feet	11 Inches	80 Feet	7 Inches
-	-	100 Feet	11 Inches
-	-	120 Feet	16 Inches

Note: For lengths over 120’ Please consult AEC Product Support

SETTING THE MACHINE GRADE

- Position the machine so the carriage paving rollers are over the top of an armor joint, bulkhead, expansion joint or end dam for the reference point to set the machine to grade.
- By adjusting the machine legs, raise/lower the machine so that the rollers are just touching or slightly above the reference points.
- Move the carriage from one side to the other along the reference point area from one side to the other to check for consistency & clearance.
- If the grade of the paving rollers is correct, measure each of the (4) legs from the top of screed pipe to the carriage rail, these should be the same, but adjust the legs to correct any differences use the leg cranks or power up/down to correct any discrepancies.

PERFORMING THE DRY RUN

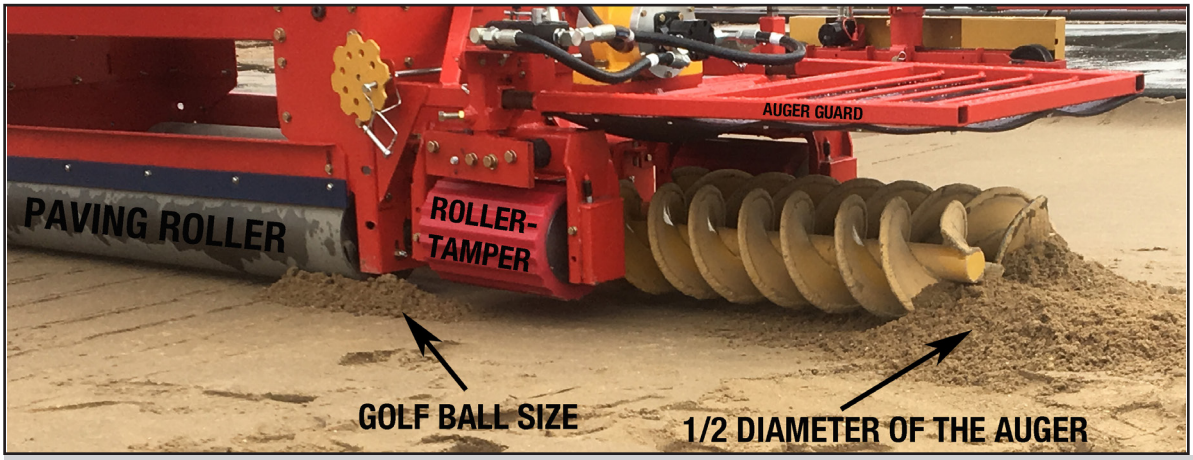
- The operator can become familiar with the controls and the operation of the machine while performing the “Dry-Run”.
- The machine can travel up and down the deck and the carriage will move transversely to check armor joints, bulkheads, end dams, expansion joints. Depth checks and clearance over rebar by the inspecting personnel.
- Adjustments can be made, and typically it is in the screed pipe.

MACHINE PRE-POUR PROCEDURES

- Inspect, lubricate and grease all grease fittings and moving parts before placing any concrete.
- Coat the legs, paving carriage and frame with a protective coating on any part that will come in contact with wet concrete (**DO NOT USE FORM OIL OR DIESEL**)
- Use clean designated containers to add hydraulic fluid to the hydraulic tanks and keep any dirt or contaminates from getting into the hydraulic system, also, take care and clean all hydraulic fittings, quick dis-connects & components before any work performed.
- Follow MFG guidelines for engine services or maintenance.

SETTING THE ROLLERS AND DRAG PAN ASSEMBLY

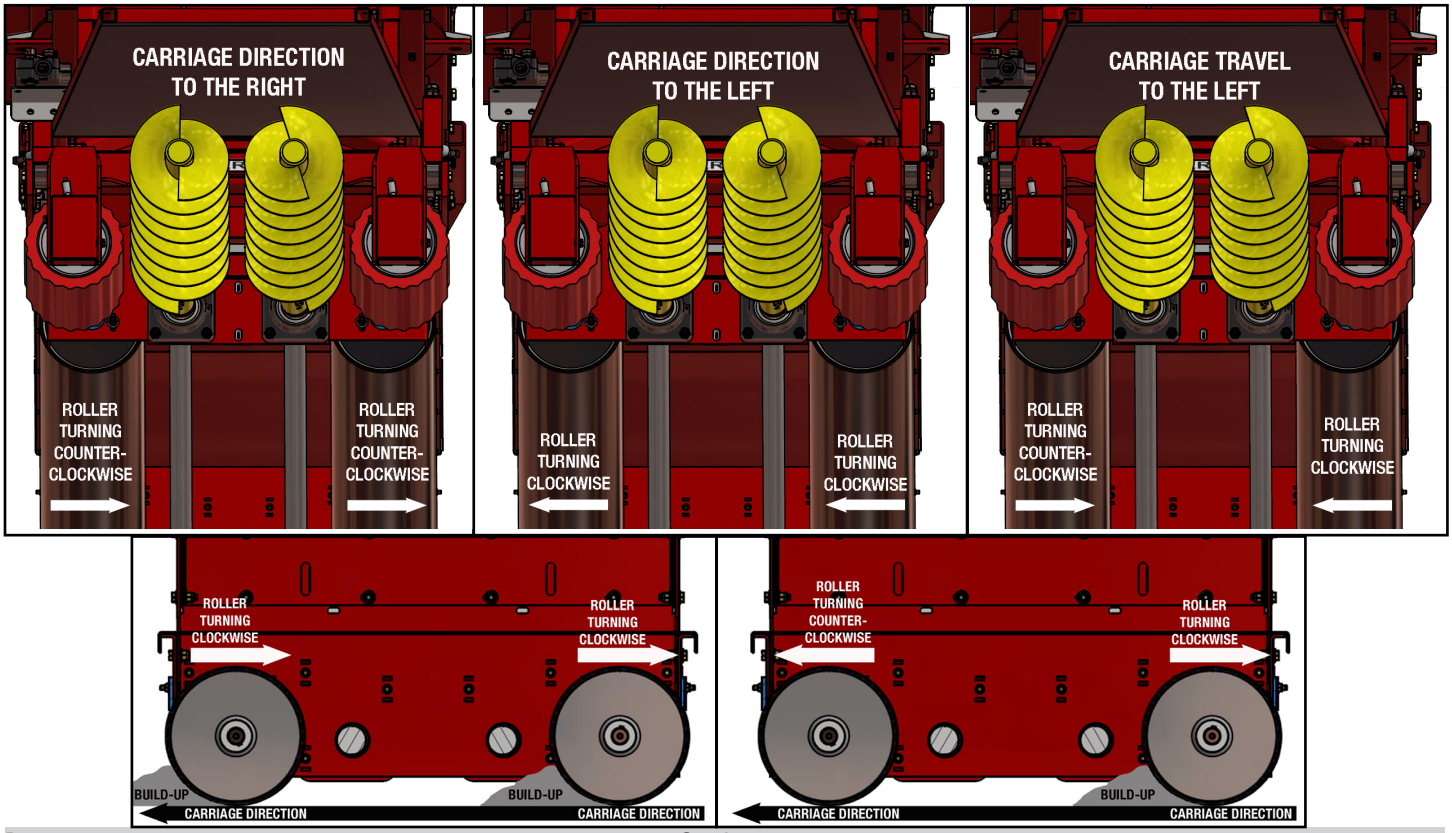
- Once the pour has begun and the machine has moved passed over the bulkhead the full length of the paving rollers, raise the back side of the machine 1/8 of an inch 1/2 turn counter clockwise (SEE PICTURE).
- This will prevent any digging in on the concrete surface with the trailing edge of the roller, leaving a small ridge or lines.
- When the machine is raised in the back, the augers will “dip” in the front and they may need to be readjusted.
- A tennis ball to golf ball size wind roll is expected in front of the paving roller.
- Attach the burlap drag to the drag pan assembly.
- **NOTE:** With new burlap being used it is important to soak it in water for 24 hours prior to concrete placement. This will remove any residue in the burlap and allow it to be more absorbent **(KEEP WET DURING POUR)**.
- If the pressure from the burlap is dragging to hard, readjust the excess around the end frame with the spikes.
- If the pressure from the burlap is too light, increase the length of the burlap by letting some excess material off the end frame.
- If the drag pan is hopping or being dragged across the deck during each pass the frame assembly may be too high or the chains may be too tight.



Paving Operation

ROLLER ROTATION

- Paving roller rotation can turn either clockwise or counter clockwise or they can rotate in opposite directions.
- Rotate the rollers in the same direction for the first few passes at the beginning of the pour by using the roller directional valves, and place the two valve levers in the same direction .
- Facing the front of the carriage, the rollers will turn counter clockwise when the carriage travels to the right and clockwise when the carriage travels to the left (**SEE BELOW**).
- Have the automatic roller reversing valve in the "Reversing" position, to allow the roller direction to change with each pass of the carriage.
- When you have a few passes across the deck, change the direction of one rollers' by putting the lever opposite of the other (**BOTH WERE IN THE SAME DIRECTION - SEE ABOVE**)
- Depending on the direction of the carriage travel, for which lever will be adjusted.
- When putting the automatic roller reversing valve in the "Non- Reversing" position causes no change to the roller direction with each pass of the carriage.
- Facing the front of the carriage, the left roller turns counter clockwise and the right roller turns clockwise.
- The leading roller will consolidate the concrete, allowing, the trailing roller to pave the surface.
- This roller rotation will allow for the highest production and sealed surface finish, when pouring a flat bridge deck or slab.
- Roller rotation direction will depend on which works better or produces the most satisfactory result due to varying slumps, mix designs, weather or other production or delivery variables.
- The carriage automatic pivot will keep the material to the front of the paving rollers during each carriage pass, preventing from trailing off to the rear of the rollers.
- A smooth transition of the pivot device can be achieved by turning the hex-key set screws clockwise or counter clockwise to allow greater flow or restrict flow on the automatic roller reversing valve

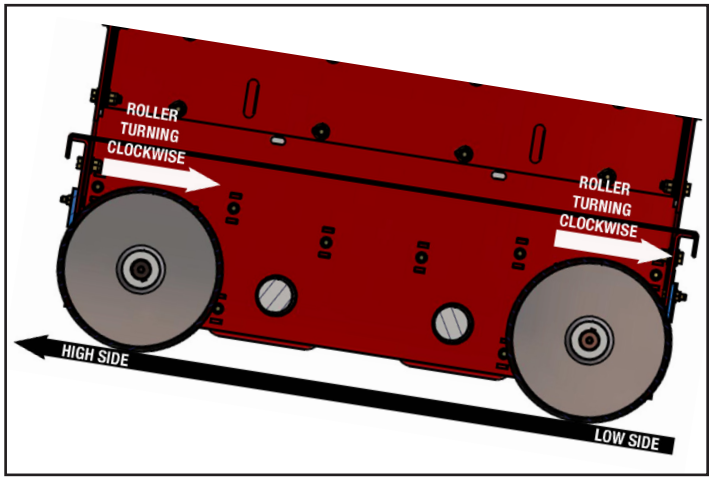


SUPER ELEVATIONS

- For super elevated bridge decks, skewed decks or slabs, the roller rotation must be turning in the same direction with the valve lever set in the “Non-Reversing” position.
- Paving carriage travel from the low side to the high side of the elevation pushes the concrete to the top and screed the material to grad (**ONLY PAVING TO THE HIGH SIDE**)
- The paving carriage rolls over the surface going down the super elevation and does not screed the surface to grade.
- Roller direction will depend on the direction of the pour and which is the high side. (SEE PICTURE)

PAVING UP & DOWN GRADES

- The rear of the paving rollers may need to be raised higher (approximately 1/8” to 1/4”) when paving up a grade or slope.

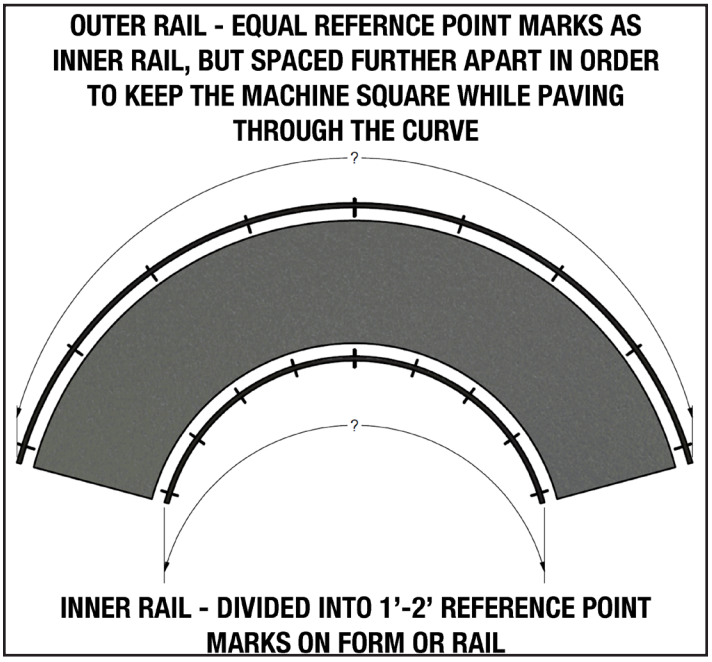


- Turn the leg crank 1/2 turn counter clockwise to raise the back of the machine 1/8 of an inch.
- With the back of the machine raised, the augers may need to be adjusted lower, watch the amount of concrete the rollers are carrying. (Use the hand crank on the sides of the carriage to adjust the auger elevation) These adjustments will counteract the tendency of excess concrete from moving downhill toward the paving rollers.
- The concrete may tend to “run-away” form the machine when paving down a grade and the augers may need to be raised higher to provide the proper amount of concrete to the paving rollers.
- The rear of the paving rollers may not need to be raised but make sure there is as much total contact with the deck or slab surface, because when paving downhill, you want maximum surface contact with the concrete but careful not to allow any ridge, excess concrete or lines to come off the rear of the paving rollers.

Paving Operation

PAVING CURVES

- Mark an equal number of spaces on the inner curve (1 to 2 feet spacing), know the length or distance of the inside.
- Count the number of spaces on the inner curve and mark the same number of spaces on the outer curve. The length of these spaces will vary with the length of the outer curve section (SEE PICTURE).
- To keep the machine square throughout the pour, the operator will at times place the machine direction control lever in the neutral position allowing a longer amount of travel for the outer curve end of the machine
- The front edge of the machine wheels of both the inner and outer ends needs to stay aligned with the marks spaced on the inner & outer rail.



MACHINE ADVANCEMENT

- The operator will pace the machine travel advancement to coincide with the placement of the concrete,
- Place concrete no more than 5 to 8 feet in front of the machine.
- Average advancement of the machine can vary from 3 to 8 inches for each carriage pass.
- In hot, windy weather, this will insure fresh concrete will move into the paving rollers before any drying occurs.
- Always keep the deck wet.

CARRIAGE TRAVEL SPEED

- Slower carriage travel will allow the paving rollers to have longer contact with the surface thus allowing the concrete to seal better and provide a more uniform surface finish result.
- When paving with high slumps or mix designs with super plasticizer, slowing the carriage travel speed will be beneficial.
- To slow the carriage travel, use the carriage speed control valve located on the operator's console.
- The engine should be running at full throttle for full RPM's. (2900 to 3300).
- This rate will allow the carriage to travel on average, approximately 80 to 90 feet per minute transversely across the machine.

BEFORE PAVING SKEWED DECKS

- Before paving skewed decks it is essential that you determine all of the job specifications and special details prior to setup of your 6048 Paver. Ask yourself the following four questions:
  1. What is the skew angle measured perpendicular to centerline (90 degrees to centerline)
  2. What is the distance between the screed rails, measured perpendicular to centerline of the deck
  3. Is the deck super elevated
  4. Is the deck crowned
- To determine the length of the machine set at the required skew angle (A), use the following equation:

(B x L) + C = Total Machine Length,

where,
B = Conversion Factor
L = Rail to Rail Legth, measured perpendicular to the roadway centerlin (in feet)
C = Extra machine lenght required due to skew

"A" - Skew Angle in Degrees	"B" x "L" Rail to Rail Length	"C" - Extra Length
15	1.04 x Length	4-1/2 Ft
20	1.06 x Length	5 Ft
25	1.10 x Length	6 Ft
30	1.15 x Length	6-1/2 Ft
35	1.22 x Length	7-1/2 Ft
40	1.31 x Length	8 Ft
45	1.41 x Length	9 Ft
50	1.56 x Length	10-1/2 Ft
55	1.74 x Length	12 Ft
60	2.00 x Length	13-1/2 Ft

Paving Skewed Decks - Basic Machine

Follow the standard machine setup instructions, initial roller and drag pan adjustments and roller rotation. Make sure that the truss and carriage rail have been straightened per standard machine setup. Mechanically disconnect the hydraulic skew cylinder and tie it back out of the way. Manually rotate the lower carriage until the paving rollers are parallel to the centerline and lock in position using the skew ring clamps provided with the machine. The drag pan and burlap/astrograss "H" frames will need to be turned so that they are parallel to the carriage rail. This allows the pan and the texturing cloth to follow the skew angle as the carriage travels across the deck or slab. At this point the paving rollers need to be stringlined to the carriage rail so that the rollers are parallel to the carriage rail. Follow the standard setup instructions for stringlining the paving rollers. Be sure to run the stringline across the top of the carriage rail adjacent or parallel to the paving rollers.

Paving Skewed Flat Decks and Super Elevations with No Crown

Paving skewed flat decks and super elevations do not require any special equipment. When specifications allow, the machine can be positioned at an angle approximately equal to the skew angle. Position the lower carriage so that the paving rollers are parallel to the centerline of the deck. The deck should be finished from the leading end of the machine to the trailing end of the machine. The paving rollers should be rotating in the same direction and the automatic roller reversing valve should be set in the "Non-Reversing" position.

The concrete should be pushed from the low side to the high side of the elevation and roll over the concrete going down the super elevation. The machine should pave from the leading end (must be the low side of the deck) to the trailing end (must be high side of the deck).

Paving Operation

Paving Skewed Decks with Crown

- Review the project specifications and requirements. When determining machine lengths for skewed decks with a crown, remember all lengths start with the crown line. Contact the ACP Service Department if the crowned deck requires a special length insert. The machine frame and the carriage rail should be crowned on opposite corners of the inserts. **NOTE: WHEN PLACING A CROWN INTO THE MACHINE THE DIAGONAL ANGLE BRACES IN THE SECTION BEING CROWNED.**
- When the 6048 Paver is skewed to pave skewed decks with a crown, each carriage travel rail must be crowned exactly above the crown line on the deck. The lower carriage must be skewed so that the paving rollers are parallel to the centerline of the deck. The carriage wheels on the upper carriage must be repositioned so that they are centered over the crown line. Reposition the carriage wheels by means of the Optional Carriage Skew Bar Kit. The skew bar kit offsets the carriage wheels so that when the carriage passes through the crown the paving rollers pass over the crown parallel to the crown line. The skew bar kit comes drilled for skew angles of 22 degrees through 45 degrees. If the skew bar kit is installed in the field, it may be advantageous to remove the carriage and install the kit while the machine is split for the installation of additional inserts. It is important that you know and have available the following information before ordering the optional skew bar kit:
  1. What is the skew angle
  2. Is the skew angle measure from a line “parallel to” or “perpendicular to” the centerline of the bridge deck? **Note: For consistency, ACP measures from perpendicular.**
  3. Is the skew clockwise or counter clockwise from a line perpendicular to the centerline of the bridge deck
  4. Is the deck crowned
  5. What is the cross slope (%) for each side of the crown
  6. What is the distance, measured perpendicular to the centerline of the deck, between the screed rails
  7. Know the Model and Serial Number of your machine.

Skew Bar Kit Installation

1. Remove the carriage assembly from the machine and block up the carriage so that the carriage weight does not rest on the paving rollers.
2. Remove or deactivate the carriage skew cylinder.
3. Remove the carriage wheel assemblies from the carriage hanger frame and put aside for reinstallation.
4. Add extension chain tightener plates onto the existing chain tightener plates.
5. Install the tube mount brackets into the upper carriage frame and mount the skew bar tubes at the locations marked “Base”.
6. Install the carriage wheel mounts onto the skew bar tubes at the bolt holes that match the angle determined by your job specifications. Install the carriage wheel assemblies that were removed from the carriage hanger frame into the carriage wheel mounts on the skew bar.
7. Install the complete carriage assembly with skew bar it into the machine frame.

Please contact AEC Product Support department if you have any questions regarding any service or maintenance of your Bridge Deck Paving Machine.

Daily Service:

- AFTER EACH POUR, clean the machine as soon as possible. Lightly coat the paving rollers with oil.
- Inspect engine hydraulic pump drive coupling for alignment and water.
- Check the engine oil level on both power units.
- Inspect all hydraulic hoses for damage or leaks
- Check the battery water level on both power units.

Engine Service:

Allen Bridge Deck Finishers use two engines. One engine is mounted on the stationary power unit to power machine travel and paving carriage travel. The other is mounted on the paving carriage to power the paving rollers, augers and various optional carriage accessories. Consult your Owner's Manual for recommended service procedures.

To insure the best engine performance and life, a strict schedule of routine service and maintenance is recommend- ed. Change the engine oil after the first 50 Hours of operation and every 250 Hours thereafter.

Check the level of hydraulic oil in the oil reservoir on a daily basis. Check the oil before starting the engine. Run the engine for a few minutes to purge any air from the lines and then check the oil again. Maintain the oil level within 2 inches of full but leave at least 1 inch of air space for expansion. The reservoir level should be checked after hose length has been added and after the machine is lengthened. Approximately one gallon of hydraulic oil is required to fill 100 feet of 1/2" hose. Use AW-68 hydraulic fluid or Hydraulic Transmission Fluid Type C-2. Do not use engine oil. Use clean containers when adding hydraulic oil to the reservoir. Take every precaution, to avoid contaminating the oil in the system. Thoroughly clean all hydraulic components before loosening or removing for repairs.

The hydraulic oil filter element(s) should be replaced with a 10 micron filter element after the first 50 hours of operation and every 300 hours thereafter. Replace hydraulic filters each time the hydraulic oil is replaced.

Before paving or transporting the machine, secure all hoses to keep them away from sharp edges and moving parts. Before connecting hoses clean the quick disconnects and fittings.

LUBRICATION SCHEDULE		
DAILY		
POWER UNIT		
Hydraulic Oil Reservoir	Inspect	Engine Oil SAE 30, MS SD or SE - Add oil if necessary.
Engine Crankcase	Inspect	See engine manufacture recommendation - Add hydraulic oil if necessary.
PAVING CARRIAGE		
Carriage Wheels	Lubricate	NLG1-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed.
Carriage Hold Down Rollers	Lubricate	NLG1-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed.
Auger Bearings	Lubricate	NLGI-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed. Grease bearings immediately after pour to flush concrete from bearing seal.
Paving Roller Bearings	Lubricate	NLGI-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed. Grease bearings immediately after pour to flush concrete from bearing seal.

Lubrication Maintenance

LUBRICATION SCHEDULE		
Reversing Valve Slide Bracket	Lubricate	NLGI-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed, approximately 5-6 pumps.
Hydraulic Oil Reservoir	Inspect	68 Hydraulic Oil - Add hydraulic oil if necessary. Replace oil filter with a 10µm filter element after the first 50 hours and every 250 hours thereafter.
Engine Crankcase	Inspect	Replace oil filter with a 10 micron filter element after the first 50 hours and every 250 hours thereafter.
LEGS & TRAVEL BOGIES		
Power Leg Screws	Lubricate	NLGI-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed, approximately 5-6 pumps.
Bogie Wheels	Lubricate	NLGI-2 Lithium Base Grease - Extend Inner Leg 5 Inches. Apply 5 to 10 pumps of grease. Retract leg to its original position.
CONTROLLER		
Controller Cam Rollers	Lubricate	Engine Oil SAE 30, MS SD or SE
Controller Sliding Parts	Lubricate	L88023 “Anti-seez” or graphite filled grease. - Brush L88023 “Anti-seez” around slots and on main controller rail and striker arms. Apply to finishing roller reversing rod.
Idler Sprocket Bearings	Lubricate	NLGI-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed.
EVERY 25 HOURS		
POWER UNIT		
Engine Crankcase	Replace	Engine Oil SAE 30, MS SD or SE - Add oil if necessary.
PAVING CARRIAGE		
Engine Crankcase	Replace	Engine Oil SAE 30, MS SD or SE - Add oil if necessary.
LEGS & TRAVEL BOGIES		
Drive Bogie Axle Bearings	Lubricate	NLGI-2 Lithium Base Grease - Lubricate slowly until excess lubricant is observed.
Bogie Drive Chains	Lubricate	Chain Lube
CONTROLLER		
Carriage Travel Chains	Lubricate	Chain Lube
AS REQUIRED (AT LEAST ONCE A YEAR)		
POWER UNIT		
Hydraulic Oil Reservoir	Replace	68 Hydraulic Oil - Remove and clean suction screen. Replace oil filter element with a 10 micron element every 300 hours.
PAVING CARRIAGE		
Hydraulic Oil Reservoir	Replace	68 Hydraulic Oil -Remove and clean suction screen. Replace oil filter element with a 10 micron element every 300 hours.
LEGS & TRAVEL BOGIES		
Manual Leg Screws	Lubricate	NLGI-2 Lithium Base Grease - Disassemble leg and brush grease onto leg screw and fill leg thrust bearing with grease.
Leg Rollers	Lubricate	NLGI-2 Lithium Base Grease - Remove leg rollers and work grease into bearings.

Troubleshooting

SYMPTOM	CAUSE	REMEDY
FINISHING		
Concrete is pitting behind roller tubes (Tubes plowing concrete)	Too much concrete in front of tubes	Lower Augers
	Concrete is drying out	Slow the concrete delivery in front of machine to allow machine to keep up.
Concrete is pitting behind roller tubes (no concrete is in front of the leading tube)	Augers are to low, starving the roller tubes	Raise the augers to allow more concrete to tubes
Roller tubes are leaving a line	Rear of tubes are too low	Raise rear of machine 1/8" - 1/4" using leg cranks
Finish behind drag pan is not sealing up	The concrete is too dry due to wind or temp.	Burlap must remain wet at all times. Pre-wet the burlap 24 hours before use.
Drag pan leaves an indention near edge on the return shift	Too much additional weight in pan	Remove some or all weight from the drag pan
	Drag pan not being pulled straight	Verify that all chains are set to same length
	Pan bracket set too high above concrete	Set bracket height to approximately 6" above surface
Finish is wavy behind tubes	Carriage bouncing caused by too much space between carriage pivot blocks and ring	Tighten pivot nut or shim wear blocks until contact is made with ring
MACHINE OPERATION		
With machine in "Pave" mode, the engine loads up and carriage does not move	Hoses on shifter mechanism are not connected correctly	Connect hoses correctly on shifter
	Cam arm follower on shifter is not in "Pave" position	Check for any obstructions and check tension on cam arm follower
Loss of hydraulic power or speed	Low hydraulic fluid in reservoir	Fill hydraulic reservoir to within 2" of top
After shutting engine down it will not restart	Engine has water in fuel or has run out of fuel	Drain fuel and replace with unleaded non-ethanol fuel. Change fuel filter if needed
Carriage travels more on drive end in automatic	Upper rail on shifter requires adjustment	Adjust upper rail on shifter down
Carriage doesn't slow enough before reversing and slams into shifter	Adjustment in cam arm is required	Adjust cam arm
Loss of speed or power in carriage drive motors	Clevis on reversing valve	Clean threads of debris and adjust if needed
	Screw on end of spool is backing out	Add Locktite, reinstall and tighten
	Reversing valve is worn or faulty	Replace valve
	Carriage drive motor	Replace drive motor

Troubleshooting

SYMPTOM	CAUSE	REMEDY
Carriage slows and stops but will not regain speed	Cam arm on shifter is not adjusted correctly	Adjust cam arm or upper rail
	Reversing valve not shifting correctly	Check reversing valve for proper function and correct if needed
	Distortion in valve body could restrict spool if bolts are too tight	Loosen bolts one at a time
Machine will advance manually but not in “Pave” mode	Check valve could be stuck	Tap check valve and replace if recurs
	Cam arm is set in wrong position	Cam arm is too far one way and needs to be adjusted
Augers are functioning normally, but tubes are stopping under load	Reversing valve could be contaminated affecting relief or relief is set too low	Disassemble relief and clean. Set pressure to 1200psi. (Verify pressure before performing this)
	Reversing valve may be damaged or tube motor is damaged or worn	Replace revering valve or motor
In one direction tubes function correctly but after shift and direction change, tubes stop	Quick disconnect fitting is malfunctioning	Change quick disconnect
Tubes are operating under load but augers are not	Augers are seeing too much concrete	Lessen amount of concrete in front of augers
	Motor for auger is damaged	Change auger motor
	Quick disconnect is faulty on auger hose	Change quick disconnect fitting
There is noise coming from tube bearings and bearings are extremely hot. Tubes may be stopping under load	Tube bearings are damaged and need replaced	Replace bearings
Tubes do not automatically reverse or carriage does not fully skew on shift	There is an obstruction blocking full travel	Remove obstruction
	Center pivot nut is too tight	Loosen pivot nut
	Center pivot shaft is binding	Take apart and clean shaft
Roller tubes and augers stop under load	Relief valve is set too low	Check relief pressure for 1800psi. If faulty, replace and reset.
Roller tubes and augers have low rpm’s or low power	Pump is faulty or worn	Replace drive pump
Roller tubes spin in correct direction but carriage doesn’t skew accordingly	Skew cylinder hoses are backwards	Swap hoses around on skew cylinder
Roller tubes on carriage will not auto reverse after lever is switched on reversing valve	Cartridges are stuck in the MV1 and MV2 locations on reversing valve	Replace both cartridges

SYMPTOM	CAUSE	REMEDY
Roller tubes on carriage will not work in non-reversing mode once the lever is shifted on reversing valve	Cartidges are stuck in the MV1 and MV2 locations on reversing valve	Replace both cartridges
Carriage blower over relief when in auto reverse after the shift	if the carriage only works in one direction in auto reverse move, the MV1 or MV2 cartridge is stuck	Remove the 9/16 Vent Cap on both the MV1 and MV2 Cartridges. Insert a small screwdriver or allen wrench into the vent cap holes. .The cartridge with the shallowest hole is the cartridge that is stuck. To get by until part is available, use small screw driver or allen wrench to manually push the cartridge spool in. If the depth is the same on both cartridges then you have successfully shifted the cartridge. The carriage will work in auto until the lever is switched.

Cleaning Procedure

Machine Cleaning Procedure

When cleaning the machine, please adhere to the following information to ensure proper cleaning and to keep the machine in the best condition possible.

Power Washing Procedure:

NOTICE

- Ensure that the water pressure is below 2000 PSI (14 MPa)
- Always keep the water temperature below 180°F (80°C)
- Use a spray nozzle with at minimum 40° wide spray angle
- Keep the nozzle at least 1 foot (300mm) away from the machine
- Avoid spraying water on the engine and electronic components. Examples include electronic displays, lights, switches, wiring, etc. The electronic components may be damaged if water is sprayed on them.
- Keep a perpendicular angle (90°) when cleaning over a decal.
  - Holding nozzle of a pressure washer at an angle different from 90° may lift the decal from the machine.
- Recommended using a safe cement dissolver, **BACK-SET** or similar**,** to remove hardened concrete.
- It is **NOT** recommended to use chemicals such as:
  - Muriatic Acid
  - Hydrochloric Acid
  - Hydrofluoric Acid
  - Sulfuric Acid
  - Phosphoric Acid
- To prevent build-up of concrete on the machine, use **BODY GUARD** or similar protection wax.

Filter Cleaning Procedure:

- Remove air filters and blow out with compressed air, **NOT** to exceed 80 PSI.

Revision Detail

MANUAL REVISION DETAIL			
REVISION #	**REVISION DATE**	**REVISION REFERENCE #**	**REVISION BY**
-	-	Initial Release	AW
A	03/20	Update to Machine Standard	MW
B	01/22	Updated Covers	MK
C	12/23	Added Note, Diesel Option to Specs	MK

allen® ENGINEERING CORPORATION

AEC FACTORY & HEADQUARTERS

819 S. 5TH STREET
PARAGOULD, ARKANSAS 72450
870.236.7751
800.643.0095 (TOLL FREE (USA ONLY)

MAILING

PO BOX 819
PARAGOULD, ARKANSAS 72451

ALLENENG.COM

CONNECT WITH US ON SOCIAL