

## **Operation and Maintenance Manual**





#### 151005 & 151010



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Register your WARRANTY within 30 days of purchase



## Introduction: Owner Information

Thank you for your decision to purchase a Blue Diamond<sup>®</sup> Excavator Plate Compactor. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator's manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and /or laws. Follow all on-product labeling and instructions.

Make sure that all personnel have read this Operator's Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Blue Diamond is continually working to improve its products. Blue Diamond reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Blue Diamond makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Blue Diamond assumes no responsibility for any errors that may appear in this manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Blue Diamond Attachments Dealer for assistance, information, or additional copies of the manual. Contact www.bluediamondattachments.com or call 888-376-7027 for a complete list of dealers in your area.

#### **Serial Number Location:**

Please record attachment information in the space provided for future reference.



Model Number:
Serial Number:
Dealer Name:
Dealer Number:
Date of Purchase:

The serial number plate is located on the top of the frame.

Always use your serial number when requesting information or when ordering parts.

**NOTE:** The directions left, right, front and rear, as mentioned throughout this manual, are as viewed from the operator's position.

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## 1. Safety

## 1.1 General Safety Information





This SAFETY ALERT SYMBOL identifies important safety messages on the equipment and in the owner's manual. when you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

# IMPORTANT

The signal word IMPORTANT identifies procedures which must be followed to avoid damage to the machine.



## DANGER



The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

# CAUTION



The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

#### **General Operator Responsibilities**



## DANGER



Follow all safety precautions outlined in this manual to avoid injury or death. This manual is not all inclusive. The operator is ultimately responsible for the safe operation of this attachment.

This attachment vibrates while in operation. Do not touch or leave any object on the attachment. The attachment must only be started by the operator in the operator's position.

This manual must be made available to any person responsible for operating the attachment. All operators must read this manual and the machine's Operator Manual before operating the attachment.

Operators must use all appropriate Personal Protective Equipment (PPE). This includes but is not limited to: safety glasses, dust masks, hardhat, and ear protection. Do not wear loose clothing, bulky bracelets, or other jewelry/clothing that may be caught in the machine.

The operator must not be under the influence or alcohol or any drugs which cause sleepiness or other impairments.

The working area must be indicated and illuminated.

The operator must follow the maintenance program recommended by the manufacturer to keep the attachment in good working condition.

It is absolutely forbidden to tamper with, eliminate, or modify safety devices or protections.



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The temperature of certain parts of the equipment after working may be very hot: before taking any action on the equipment allow the temperature to cool and use gloves to protect hands from injuries.

## **1.2 Safe Operation**

#### **Operator Requirements**

The operator must be suited to the work and be physically and mentally able to withstand the demands of operating the equipment for its intended use.

The operator must not allow anyone to approach the machine while it is running. Personnel not trained on this machine must NOT be allowed to use the machine.

The operator must follow all given instructions to obtain maximum performance, minimum consumption, and maximum safety.

The operator is ultimately responsible for his safety and the safety of others while operating this attachment. In order to be as safe as possible, the operator MUST follow all the safety regulations in this manual.

#### **Operator's Position and Danger Zone**

While the machine is running, no persons should enter the operation area. The machine's action radius should never be entered while the attachment is turned on (Item 4) [Figure 1].

The operator should be in the control area at all times when the machine is running (Item 1) [Figure 1].

Bystanders should never be in the danger zone of the machine's action radius while the machine is running (Item 3) [Figure 1]. If bystanders are required to be in the area, they must remain in a safe place outside the machine's action radius (Item 2) [Figure 1) beyond the safety zone limit (Item 5) [Figure 1].

The operator is responsible to take special care to make sure the entire operation zone including the machine's action radius and the safety zone limit are clear of bystanders for the entire time he or she is operating the machine.

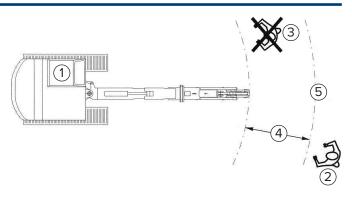


Figure 1

### 1.3 Personal Protective Equipment

The operator involved in working with the equipment or in the surroundings of the equipment must always be equipped with adequate Personal Protective Equipment (PPE). This includes but is not limited to:

- Hardhat
- Leather working gloves
- Safety glasses
- Proper work shoes
- Ear protection
- Proper work clothing

See General Operator Responsibilities in Section 1.1 on page 4 for more information on safe practices.

## 2. Transport and Installation



## WARNING



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The persons in charge of transport and installing the machine must be acquainted with the following instructions. The safety instructions in this manual are not all inclusive.



Pay careful attention to the weight of the attachment.

## 2.1 Transport

Verify the total equipment weight in working conditions including the attachment weight found in section 6.1 Attachment Specifications on page 17.

To safely move the attachment when not attached to the excavator, use correct rigging and avoid direct contact between the rigging and sharp edges.

Always use transport and rigging that can accommodate the attachment's weight.

### 2.2 Attachment Hoses Connection



#### AVOID SERIOUS MALFUNCTION

- The equipment can function only on an excavator with a breaker hydraulic circuit.
- Verify that the excavator circuit valves are open.
- Starting the equipment with the Return Line Valve CLOSED will cause severe damage to the hydraulic motor.

Connect the pressure line hose to the IN or entry side (Item 1) [Figure 2]. Connect the return line hose to the OUT or exit side (Item 2) [Figure 2].

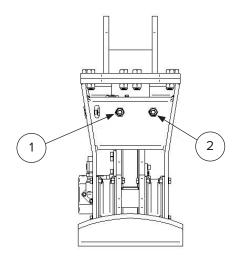


Figure 2

## 2. Transport and Installation

# 2.3 Coupling and Uncoupling from the Excavator

#### Coupling

- 1. Place the attachment horizontally with its axis parallel to the excavator boom on the ground in a stable position.
- 2. Remove the bucket (if present).
- 3. Insert the boom end in the middle of the adapter plate.
- 4. Line up the hole of the excavator boom with the equivalent one on the adapting plate, insert the first pin and secure.
- 5. Line up the hole of the connecting rod with the second hole on the adapting plate, insert the second pin and secure [Figure 3].

## 🚹 IMPORTANT 🛕

Close the excavator hydraulic circuit.

- Remove the hydraulic circuit plugs. If there aren't any, collect the hydraulic oil in a container, then connect the hydraulic hoses to the equipment (See section 2.2 Attachment Hoses Connection on page 6).
- Keep the hydraulic hose plugs in a safe place to be used again when servicing the equipment.

#### Uncoupling

1. Place the equipment horizontally on a safe area of ground.



- 2. Disconnect the quick couplers, making sure they are clear of foreign debris.
- 3. Remove the stud pin.
- 4. Pull out the arm pin.
- 5. After disconnecting the hydraulic system, pull the arm out of the mount ears.

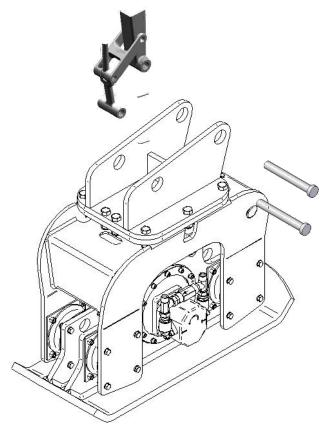


Figure 3

## 3. Operation

## DANGER



The Operator MUST strictly follow the Manufacturer's instructions.

- Before starting the equipment, it is advisable to move the excavator boom back and forth several times to lubricate the bearings inside the vibration case.
- Always heat the oil before working, especially at low temperatures. Action the equipment or the central excavator piston to reach an oil temperature of 104–113°F (40–45°C).
- When starting, supply the necessary oil flow to the hydraulic motor in order to quickly reach the suggested RPM as this will avoid certain blows to the excavator boom.
- Once the equipment is placed at work, there is no need to stop it to reposition it.
- Position the equipment parallel to the service; an unbalanced load will damage the antivibrators.



Do not excessively load the equipment with the excavator boom during the compacting phase.

The casing and the vibrating plate must not come into contact during the compacting phase. Improper contact examples can be seen circled in Figure 4. When this contact is seen, there is an excessive load of the excavator.

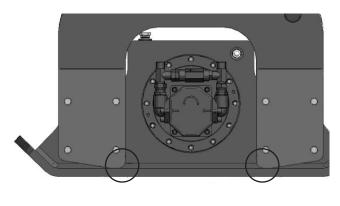


Figure 4

## 3.1 Motor RPM

When installing, the technician must determine the exact number of revolutions per minute of the excavator engine in order to supply the correct oil flow as technically specified.



It is absolutely necessary that the operator follows these instructions.

The equipment will be damaged if the RPMs are higher or lower than those specified.

## 4. Maintenance



DO NOT carry out any maintenance on the equipment or on the hydraulic circuit when they are under pressure or at high temperatures.

It is always essential to remove the connecting hoses between the attachment and excavator.

## 4.1 Cleaning

The equipment does not require specific actions. Particular care must be taken to avoid any type of oil contamination through all hydraulic hose couplings which must be clean and plugged when disconnected from the excavator hydraulic circuit.

## 4.2 Maintenance and Checks

The equipment requires some important maintenance, in order to work properly for a long time.

#### Greasing

The greasing operation, if done manually, must be performed every 100 hours supplying a suitable quantity of grease to the equipment. In the event that working conditions are excessively dusty or humid, it is advisable to perform the greasing operation every 50 hours.

Remember to use a grease that is:

- Water resistance
- Anti-rust, anti-corrosive
- NLGI 2 consistency
- Dripping point of 180°C
- Temperature of use point of -20 160°C

#### **Oil Replacement**

Oil replacement inside the case where the excentric masses, gears, and bearings are found must be performed every 1000 hours. We remind you to use wear resistant gear oil 80W90 with the following features:

- Density at 20°C 890 kg/mm<sup>3</sup>
- Viscosity at 40°C 135 cSt
- Freezing point –29°C
- Aspect Clear

#### **Other Checks to Carry Out**

Verify the absence of oil leakage from the hydraulic motor.

Verify the absence of cracks on the case or on the excavator adapting plate.

## 4.3 Hydraulic Circuit

#### Hydraulic Oil Temperature

Verify that the hydraulic oil temperature in the excavator tank during work does not exceed 80°C. Higher temperatures could damage the hydraulic motor.

#### Level of the Hydraulic Oil in the Tank

It is absolutely necessary to pay attention to the hydraulic oil level of the excavator tank. If it is under the lowest limit, the hydraulic motor can be damaged.

It is important to check the rigid and flexible hoses in order to find damages, crushed hoses, or oil leaking.

#### **Hydraulic Hoses and Couplings**

Both the rigid and flexible hoses must be checked for any damages, hose crushes, or oil leakages.

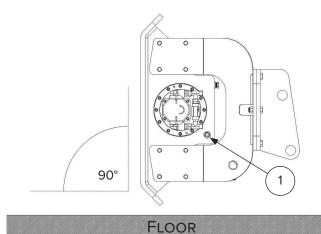
## 4. Maintenance

## 4.4 Weekly Maintenance

#### **Oil Level**

Check the oil level inside the vibrating case.

The equipment must be placed in a vertical position before starting and verified that the oil level is above the central position of the oil level inspection point (Item 1) [Figure 5]. If needed, add wear resistant gear oil.



#### **Check Bolt Loosening**

Check the eventual loosening of bolts on a weekly basis. Pay particular attention to:

- Adapting plate bolts
- Hydraulic motor bolts
- Anti-vibrator fixing bolts

# **4.5 Storing and Returning to Service**

Stock the equipment in a horizontal position in a dry place.

#### **Returning to Service**

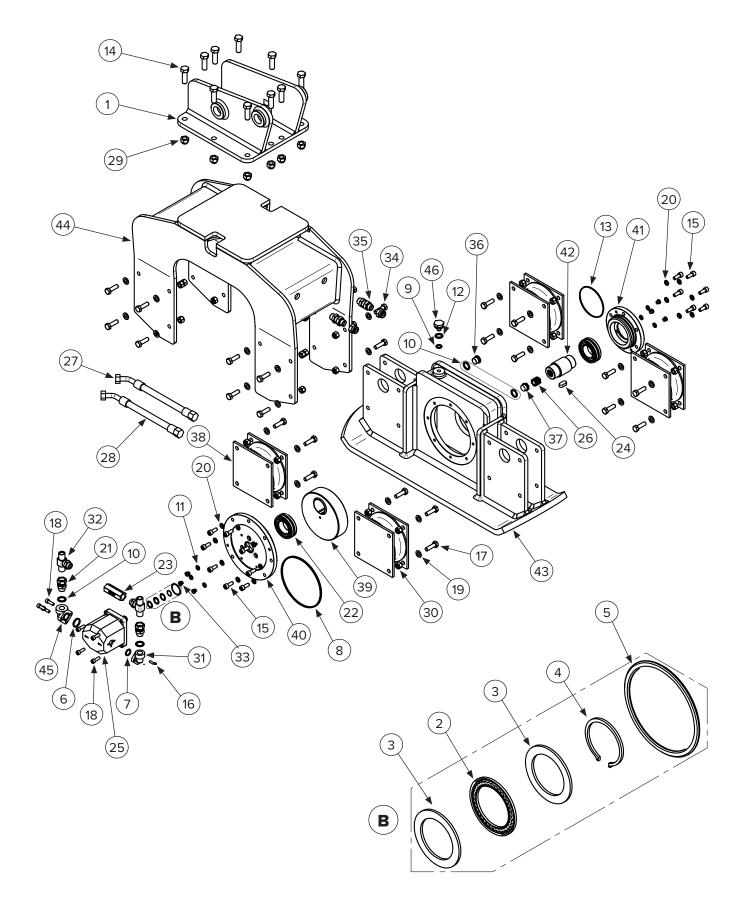
After a long period of storage, before starting the attachment, it is necessary to move it back and forth with the excavator boom and repeat this procedure at least 2 or 3 times. This operation allows the bearings to be lubricated before use.

Figure 5

## 4.6 Troubleshooting

PROBLEM	CAUSE	SOLUTION
	Excessive excavator load avoiding the anti-vibrators to absorb vibrations	Lower the load on the equipment
Strong blows of the excavator boom	Low oil flow supplied to the equipment	Check the supplied oil flow
	Oil flow control valve not set correctly	Contact Blue Diamond <sup>®</sup> Attachments product support to set correctly
Working pressure exceeding 60 bar with the equipment lifted from the groundPossible bearing damage		Check and replace if needed

### 5.1 151005 Parts Breakdown

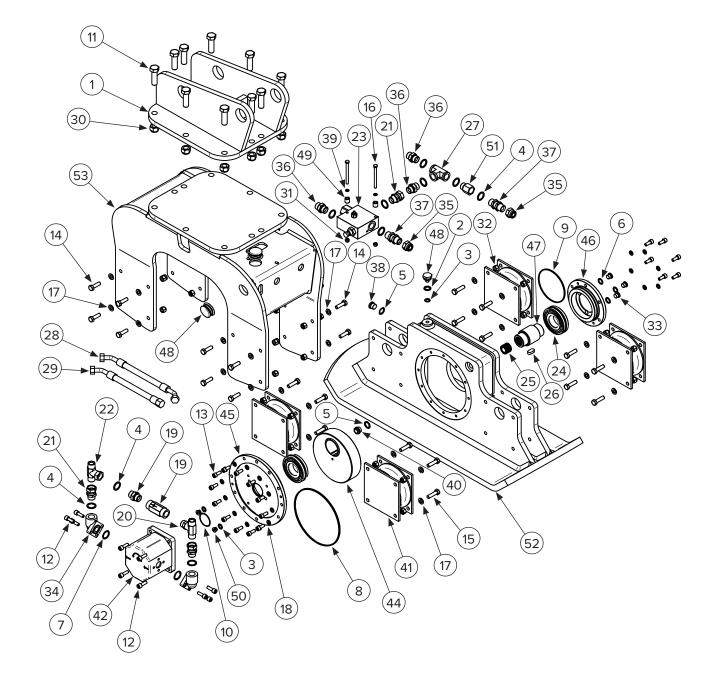


## 5.1 151005 Parts Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	Varies	Adapting Plate	1
В	251251	Motor Seal Kit (Contains Items 2 – 5)	1
2	_	Motor Variseal (included in seal kit)	1
3	_	Motor Plate (included in seal kit)	2
4	_	Motor Snap Ring (included in seal kit)	1
5	251252	O-Ring (included in seal kit)	1
6	251253	O-Ring	1
7	251120	Motor Small Flange Fitting O-Ring	1
8	251255	O-Ring	1
9	235252	Bonded Washer	1
10	235305	Bonded Washer	4
11	236614	Bonded Washer	6
12	235252	O-Ring	1
13	251122	O-Ring	1
14	251163	Mount Bolt	10
15	251164	Right Cover Bolt	14
16	251165	Motor Small Flange Fitting Bolt	3
17	235266	Screw	32
18	251166	Motor Large Flange Fitting Bolt	7
19	251167	Washer For Vibration Damper	32
20	251168	Right Cover Washer	14
21	251123	Straight Fitting - Motor Fitting To Tee Fitting	2
22	251124	Bearing	2
23	251125	Valve	1
24	251126	Guide	1
25	251250	Hydraulic Motor	1
26	251127	Gear Component	1
27	251128	Motor To Bulkhead Supply Hose	1
28	251129	Motor To Bulkhead Return Hose	1
29	251169	Mount Nut	10
30	235267	Nut	32
31	251130	Motor Flange Fitting - Supply Side	1
32	251131	Tee Fitting For H-Valve	2
33	251132	Plug	6

ITEM	PART NUMBER	DESCRIPTION	QTY
34	235320	Plug	2
35	251133	Bulkhead Adapter	2
36	236589	Plug	1
37	251134	Oil Level Indicator	1
38	251115	Vibrating Damper	4
39	251135	Ex-centric Mass	1
40	251136	Left Cover	1
41	251137	Right Cover	1
42	251138	Shaft	1
43	251139	Internal Case	1
44	251140	External Case	1
45	251141	Flange	1
46	251505	Filter Tap	1

## 5.2 151010 Parts Breakdown



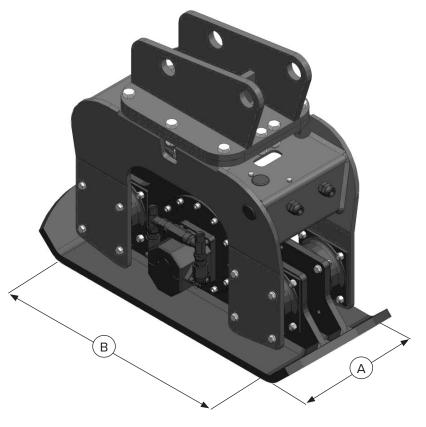
ITEM	PART NUMBER	DESCRIPTION	QTY
1	251205	Adapting Plate	1
2	251510	O-Ring	1
3	235252	Bonded Washer	3
4	235352	Bonded Washer	10
5	235305	Bonded Washer	2
6	236535	Bonded Washer	3
7	236539	O-Ring	2
8	251142	Motor Base Plate O-Ring Seal	1
9	251143	Right Cover O-Ring	1
10	251144	Motor Shaft O-Ring Seal	1
11	251175	Screw	10
12	251170	Motor Flange Fitting Bolt	10
13	251164	Right Cover Bolt	18
14	253266	Screw	16
15	251171	Vibration Damper Bolt	16
16	251172	Valve Block Bolt	2
17	251167	Washer For Vibration Damper	32
18	251168	Right Cover Washer	18
19	251145	Valve	1
20	251146	Tee Fitting For H-Valve - Supply Side	1
21	251147	Straight Fitting - Motor Fitting To Tee Fitting	3
22	251148	Tee Fitting For H-Valve - Return Side	1
23	251149	Valve Block	1
24	251150	Bearing	2
25	251110	Gear Component	1
26	251126	Guide	1
27	251353	Coupling	1
28	251151	Motor To Bulkhead Supply Hose	1
29	251152	Motor To Bulkhead Return Hose	1
30	299022	Nut	10
31	251173	Valve Block Nut	2
32	235267	Nut	32

## 5.2 151010 Parts Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
33	236585	Plug	3
34	251153	Motor Flange Fitting	2
35	235362	Plug	2
36	235124	Nipple	4
37	251350	Bulkhead Adapter	2
38	236589	Plug	1
39	251174	Valve Block Washer	2
40	251134	Oil Level Indicator	1
41	251115	Vibrating Damper	4
42	251154	Hydraulic Motor	1
43	236609	Plug	2
44	251155	Ex-centric Mass	1
45	251156	Left Cover	1
46	251157	Right Cover	1
47	251158	Shaft	1
48	251505	Filter Tap	1
49	251159	Spacer Valve	2
50	251160	Bearing Plug	2
51	251351	Coupling	1
52	251161	Internal Case	1
53	251162	External Case	1

## 6. Specifications

## 6.1 Attachment Specifications



DESCRIPTION	151005	151010
Excavator Weight	5,000 – 12,000 lb	12,000 – 22,000 lb
Attachment Weight (working conditions)	552 lbs	882 lbs
Compaction Area (Items A and B)	12 in X 24 in (A X B)	16 in X 32 in (A X B)
Frequency	35 Hz	35 Hz
Power Output	18 kN	32 kN
Min / Max Oil Flow (optimum)	11 – 16 GPM (12 GPM)	15 – 23 GPM (19 GPM)
Max working pressure	180 Bar (2610 PSI)	180 Bar (2610 PSI)
Back pressure from excavator pump	15 Bar (218 PSI)	15 Bar (218 PSI)
Hydraulic oil in the vibrating case (=/- 0.1 L)	0.55 L	0.75 L
Max temperature in the vibrating case	80°C (176°F)	80°C (176°F)
Equipment height without adapting plate	585 mm	645 mm
Hydraulic Hose Connection	1/2" BSPP	3/4" BSPP
Classification (EN)	853 2SN	853 2SN

Blue Diamond® Attachments

## 6. Specifications

## 6.2 Torque Specifications

SCREW TIGHTENING VALUES		151005 & 151010
Course Courses Mater Flamma	Size	M10 – 10.9
Cover Screws — Motor Flange	Torque	60 Nm (45 ft-lb)
	Size	M12 8.8
Anti-vibration Screws	Torque	80 Nm (60 ft-lb)

## 6.3 Optimal Environment Working Conditions

DESCRIPTION	151005 & 151010
Temperature	-5 – 45°C (-23 – 113°F)
Humidity	40 – 90%



#### Warranty MANUFACTURER'S LIMITED WARRANTY

BLUE DIAMOND<sup>®</sup> ATTACHMENTS, a manufacturer of quality attachments, warrants new BLUE DIAMOND<sup>®</sup> ATTACHMENTS products and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship when properly set up and operated in accordance with the recommendations set forth by BLUE DIAMOND<sup>®</sup> ATTACHMENTS, LLC.

BLUE DIAMOND<sup>®</sup> ATTACHMENTS liability for any defect with respect to accepted goods shall be limited to repairing the goods at a BLUE DIAMOND<sup>®</sup> ATTACHMENTS designated location or at an authorized dealer location, or replacing them, as BLUE DIAMOND<sup>®</sup> ATTACHMENTS shall elect. The above shall be in accordance with BLUE DIAMOND<sup>®</sup> ATTACHMENTS warranty adjustment policies. BLUE DIAMOND<sup>®</sup> ATTACHMENTS obligation shall terminate twelve (12) months for the Excavator Plate Compactor after the delivery of the goods to original purchaser.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the BLUE DIAMOND<sup>®</sup> ATTACHMENTS factory or authorized BLUE DIAMOND<sup>®</sup> ATTACHMENTS dealership or in any way so as in BLUE DIAMOND<sup>®</sup> ATTACHMENTS judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident beyond the company recommended machine rated capacity.

#### WARRANTY CLAIM

To submit a warranty claim, a claim must be filed with BLUE DIAMOND<sup>®</sup> ATTACHMENTS before work is performed. The BLUE DIAMOND<sup>®</sup> PRODUCT SUPPORT TEAM will advise repairs and applicable parts exchanges. Tampering with the failed part may void the warranty. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls, and pickup/delivery charges are the customers' responsibility.

#### **EXCLUSIONS OF WARRANTY**

Except as otherwise expressly stated herein, BLUE DIAMOND<sup>®</sup> ATTACHMENTS makes no representation or warranty of any kind, expressed or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO ITS MACHINERY AND/OR ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. BLUE DIAMOND<sup>®</sup> ATTACHMENTS shall not be liable for incidental or consequential damages for any breach or warranty, including but not limited to inconvenience, rental of replacement equipment, loss of profits or other commercial loss. Upon purchase, the buyer assumes all liability for all personal injury and property resulting from the handling, possession, or use of the goods by the buyer.

No agent, employee, or representative of BLUE DIAMOND<sup>®</sup> ATTACHMENTS has any authority to bind BLUE DIAMOND<sup>®</sup> ATTACHMENTS to any affirmation, representation, or warranty concerning its machinery and/or attachments except as specifically set forth herein.

This warranty policy supersedes any previous documents.



### QUALITY | DEPENDABILITY | INTEGRITY

Blue Diamond® Attachments 4512 Anderson Road, Knoxville, TN 37918 888-376-7027