## **Operation & Maintenance**



# **BBA72M** Skid Steer Broom Attachment



Broce Manufacturing Co. Inc. - 1460 South 2nd Avenue - Dodge City, KS 67801 (877) 227-8811 - FAX (620) 227-3012 - parts@brocebroom.com M-F 7:00 AM-6:00 PM CST

## 1-866-283-2759

March 2024

## www.brocebroom.com

WAI	Ianufacturing C RRANTY REGIS	
Pu	rchased From (Dea	llership)
Company:		
Address:		
City:		State: ZIP: it Hours:
Model Number:	// On	Serial Number:
	Purchaser	
Address:		State:            Unit Hours:
Delivery Date to Dealer:	1 1	Unit Hours:
	·	<u> </u>
Pu	urchaser - Type of	Business
Construction/Highway	Rental	Asphalt Contractor Other
Equipment Dealer	Municipality	Other
1. The Purchaser has been ins	tructed and/or has rea	ad the manual and understands proper
<ol> <li>preventive maintenance, ope</li> <li>The Warranty and Limitation Parts and Operators Manual</li> <li>Broce Manufacturing Co. Inc to Broce products at any time modifications to previously se</li> <li>If this Document is not signe begins at the date of delivery</li> </ol>	eration and safety pre s of Liability are found s. reserves the right to e without incurring an old units. d and returned to Bro / to the Dealership. eptance of above an	d in the Warranty pages enclosed in the make design changes or modifications y obligation to make similar changes of ce Manufacturing Co. Inc., the warrant d conditions in the Warranty Policy
<ol> <li>preventive maintenance, ope</li> <li>The Warranty and Limitation Parts and Operators Manual</li> <li>Broce Manufacturing Co. Inc to Broce products at any time modifications to previously se</li> <li>If this Document is not signe begins at the date of delivery</li> <li>I hereby acknowledge acce</li> <li>Purchaser/Owner:</li> </ol>	eration and safety pre s of Liability are found s. reserves the right to e without incurring an old units. d and returned to Bro / to the Dealership. eptance of above and	cautions. I in the Warranty pages enclosed in the make design changes or modification y obligation to make similar changes of ce Manufacturing Co. Inc., the warrant d conditions in the Warranty Policy
<ol> <li>preventive maintenance, ope</li> <li>The Warranty and Limitation Parts and Operators Manual</li> <li>Broce Manufacturing Co. Inc to Broce products at any time modifications to previously se</li> <li>If this Document is not signe begins at the date of delivery</li> <li>I hereby acknowledge acce</li> </ol>	eration and safety pre s of Liability are found s. reserves the right to e without incurring an old units. d and returned to Bro / to the Dealership. eptance of above and	cautions. I in the Warranty pages enclosed in the make design changes or modification y obligation to make similar changes of ce Manufacturing Co. Inc., the warrant d conditions in the Warranty Policy
<ol> <li>preventive maintenance, ope</li> <li>The Warranty and Limitation Parts and Operators Manual</li> <li>Broce Manufacturing Co. Inc to Broce products at any time modifications to previously se</li> <li>If this Document is not signe begins at the date of delivery</li> <li>I hereby acknowledge acce</li> <li>Purchaser/Owner:</li></ol>	eration and safety pre s of Liability are found s. reserves the right to e without incurring an old units. d and returned to Bro / to the Dealership. eptance of above and Broce Manufacturing	cautions. d in the Warranty pages enclosed in the make design changes or modifications y obligation to make similar changes of ce Manufacturing Co. Inc., the warrant d conditions in the Warranty Policy
<ol> <li>preventive maintenance, ope</li> <li>The Warranty and Limitation Parts and Operators Manual</li> <li>Broce Manufacturing Co. Inc to Broce products at any time modifications to previously se</li> <li>If this Document is not signe begins at the date of delivery</li> <li>I hereby acknowledge acce</li> <li>Purchaser/Owner:</li></ol>	eration and safety pre s of Liability are found s. reserves the right to e without incurring an old units. d and returned to Bro / to the Dealership. eptance of above and	cautions. d in the Warranty pages enclosed in the make design changes or modifications y obligation to make similar changes of ce Manufacturing Co. Inc., the warrant d conditions in the Warranty Policy

#### BROCE MANUFACTURING COMPANY BROCE BROOM LIMITED TWELVE-MONTH WARRANTY

For a period of twelve (12) months or 1,000 hours whichever comes first, from the date of delivery of product to the original user, Broce Manufacturing of Dodge City, Kansas warrants each product to be free from manufacturing defects, subject to the limitations contained in this policy. This limited warranty covers parts and labor.

No alterations my be made to attachment without the expressed written consent of Broce Manufacturing company, as this could cause serious injury or death and will also void the warranty.

This warranty does not apply to defect caused, in whole or in part, by unreasonable use while in the possession of the user, including, but not limited to, failure to properly set up product, failure to provide reasonable and necessary maintenance, normal wear, routine tune ups or adjustments, improper handling, accidents, operation at speed or load conditions contrary to published specifications, improper or insufficient lubrication, or improper storage. This warranty is not a guarantee that the performance of each product will meet the expectations of the purchaser.

Broce Manufacturing shall not be liable for consequential damage of any kind, including, but not limited to: consequential labor costs or transportation charges in connection with the replacement or repair of defective parts, lost time or expense which may have accrued because of said defects. In no event shall Broce Manufacturing's total liability hereunder exceed the product purchase price.

Many components used by Broce Manufacturing are subject to the warranties of their respective manufacturers. These warranties will be considered void if the product is modified or repaired in any way not expressly authorized, or if closed components are disassembled prior to return. Closed components include, but are not limited to gearboxes, hydraulic pumps, motors, cylinders and actuators.

Our obligation under the warranty is expressly limited, at our option, to the replacement or repair at Broce Manufacturing of Dodge City, KS or at a service facility designated by us. We are not responsible for unauthorized repairs or replacements. Any implied or statutory warranties, including any warranty of merchantability or fitness for a particular purpose, are expressly limited to duration of this written warranty. We make no other express warranty. This warranty cannot be extended, broadened, or changed except in writing by an authorized officer of Broce Manufacturing.

#### Broce Manufacturing Co. Inc.

1460 South 2nd Avenue Dodge City, KS 67801 (877) 227-8811

## TABLE OF CONTENTS

Safety Precautions	8-9
Attachment Specs	10
Serial Number Location	. 11
Attachment Operation	12
Connect Electrical System	13

#### Maintenance

Lubrication	14
Wafer Replacement	<u>15</u>
Broom Core Install	
Motor Replacement.	17
Idler Bearing Replacement	
Water System.	19
Troubleshooting	

#### Parts

Full Assembly	.22	
Cover Assembly		
Pivot Assembly.		
Broom Core Assembly	.25	
Water System.		<u>27</u>
Hydraulic Diagram	.28	
Valve Breakdown	.29	
Decals		<u>31</u>

Service Parts to	Stock	



#### SAFETY PRECAUTIONS



FAILURE TO READ THIS MANUAL AND IT'S SAFETY INSTRUCTIONS IS A MISUSE OF THE EQUIPMENT AND WILL VOID FACTORY WARRANTY.

WARNING: Cancer and Reproductive Harm www.P65Warnings.ca.gov

BA72M

8

<

## SAFETY PRECAUTIONS

#### Entering and Exiting the Operator's Position

Only Enter or Exit the skid steer/loader where proper handholds and steps are available. Inspect the handholds and step for any damage prior to use and perform repairs when necessary. Keep all handholds and steps clean to avoid serious injury.

Maintain 3 contact points with the skid steer/loader and attachment when entering and exiting the operator's position. Face the skid steer/loader when entering and exiting the operator's position. NEVER enter, exit, climb, or jump on a moving or operating attachment.

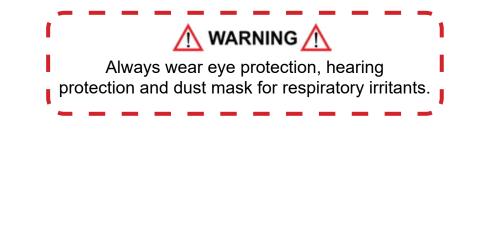
#### **Maintenance Shutdown Procedure**

**ALWAYS** perform the "Maintenance Shutdown Procedure" **BEFORE** adjusting, lubricating, cleaning, or servicing the attachment. See below for the "Maintenance Shutdown Procedure".

1. Lower the boom arm and rotate the attachment until the bucket contacts the ground and sits flat.



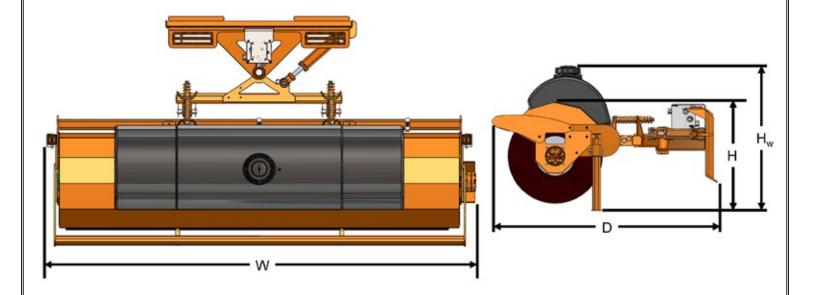
- Apply the parking brake, turn off the skid steer/loader engine, and remove the key from the ignition. DO NOT reinsert the key into the ignition until any required maintenance or adjustment is complete.
- 3. Relieve the pressure in the hydraulic lines by actuating the skid steer/loaders boom controls. NOTE: reference the skid steer/loader's manual for exact pressure relieving methods.
- 4. Disconnect the attachment's hydraulic lines from the skid steer/loader.





BBA721

## ATTACHMENT SPECIFICATIONS

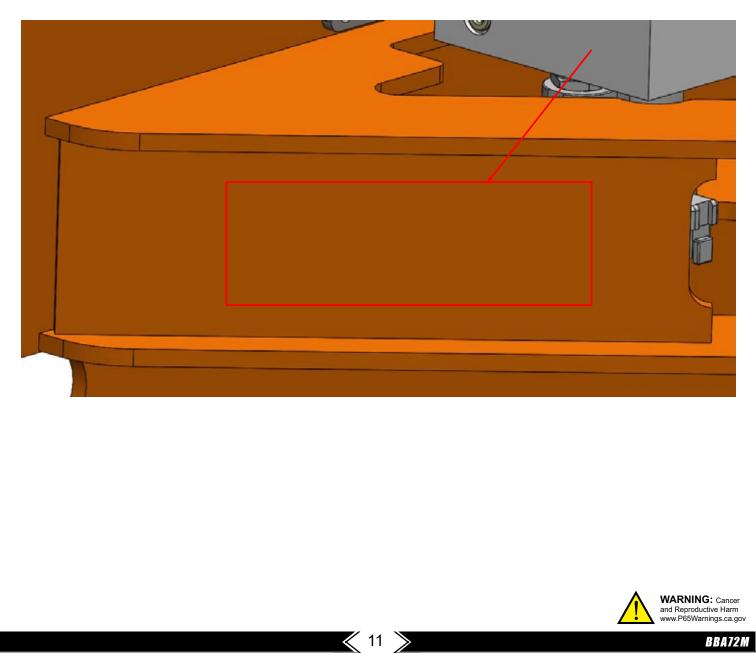


	BBA72M
Brush Width	72"
Overall Width (W)	83"
Overall Depth (D)	58.78"
Standard Package Overall Height (H)	28"
Standard Package Weight (lb <sub>s</sub> )	670 lbs
Wafer Diameter	24"
Input Flow Range	12-30 GPM
Operating Pressure	3000 PSI
Water System	Optional
Weight with Full Water System (lb <sub>w</sub> )	1070 lbs
Overall Height with Water System $(H_w)$	36.68"



#### SERIAL NUMBER LOCATION

The model/serial number plate is located on the left side of the support arm on the mounting plate. If the model/serial plate cannot be read, the serial number is stamped nearby. See the image below for more details.



## ATTACHMENT OPERATION

#### Setup and Pre-use checks

Before operating the attachment, perform the following "Pre-use Checks."

- 1. Ensure all safety decals are legible and free of excessive damage.
- Check all hydraulic hoses and adapters for leaks and ensure they are tight.
- 3. Inspect all hydraulic hoses for damage or kinks. Hoses should be free to move during operation and dumping.
- 4. If the unit has an optional water system, check the wiring and water hose for potential catching or kinkina.



#### Coupling the Attachment to a Skid Steer

- 1. Start the skid steer/loader engine, retract the attachment pins, and roll the coupler forward.
- 2. Center the skid steer/loader to the attachment and hook the coupler to the upper attachment strip. Roll the coupler backward and lift the attachment off the ground.
- 3. Actuate the attachment pins, ensuring the pins are completely engaged. Reference the skid steer/loader operations manual for more detail.

#### Connecting the Hydraulic Couplers

WARNING: Cancer and Reproductive Harm

BA72M

- 1. Perform the first three steps of the "Maintenance Shutdown Procedure" found on page 9 before connecting the hydraulic hoses to the skid steer/loader.
- 2. Inspect the hydraulic couplers for debris or damage prior to connecting the hoses. Clean or replace the couplers if necessary.
- 3. Press the couplers onto their corresponding couplers on the skid steer/loader. There should be an audible click when properly engaged.
- 4. Pull on the couplers to ensure they are properly connected.
- 5. Slowly roll the bucket back to check for interference between the hydraulic couplers and the bucket.
- 6. If the coupler interferes with the attachment, replace the coupler and straight adapter with the included stubby coupler and 90-degree adapter.



🗶 12 义

#### CONNECTING THE ELECTRICAL SYSTEM (WATER SYSTEM ONLY)

The Broce Broom Manual Angle Brooms Water System option comes with a plug-and-play electrical system. Perform the following steps to install the electrical system.

- 1. Select your power method. The attachment includes two (2) different power methods: battery power and cigarette outlet power.
  - Battery Power:

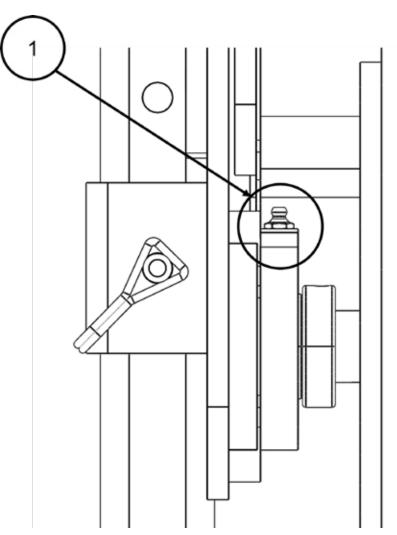
Connect alligator clamps to battery (black to negative and red to positive) and fish power wire into cab of skid steer ensuring cable isn't at risk of snagging or kinking.

- Cigarette Outlet Power:
- 2. Connect the controller to power.
- 3. Connect the attachment wire to the controller.



#### MAINTENANCE (LUBRICATION)

The attachment has a grease zerk, as shown in the image below.



This is a sealed bearing and may require no lubrication throughout its service life. However, no more than two strokes of grease at 200-hour intervals are recommended if lubrication is deemed necessary. Seals are often destroyed by over-greasing sealed bearings. Preform the "<u>Maintenance Shutdown Procedure</u>" found on page 9 before greasing.

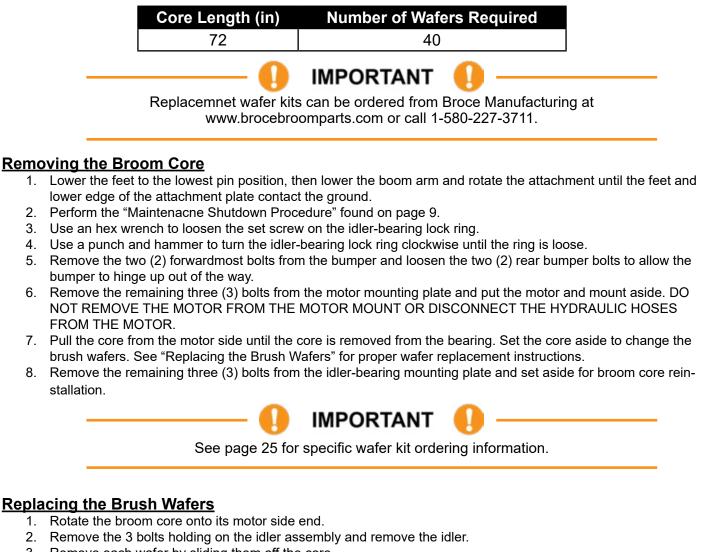
**NOTE:** The average grease gun outputs 0.025 - 0.035 ounces per stroke.

WARNING: Cancer and Reproductive Harm www.P65Warnings.ca.gov

#### MAINTENANCE (BROOM WAFER REPLACEMENT)

#### Wafer Maintenance

The Broce Broom Attachment line uses a 10" x 24" convoluted wafer. See the table below for wafer quantities for 96 inch core.



- 3. Remove each wafer by sliding them off the core.
- 4. Before installing new wafers, ensure the broom core is free of damage.
- 5. Install the wafers one at a time, clocking each 120° offset from the last wafer. A "diamond-shaped" opening should be visible when wafers are properly installed. See the image below for more details.
- 6. Reinstall the idler assembly.



15 📎



WARNING: Cancer and Reproductive Harm www.P65Warnings.ca.go

#### MAINTENANCE (BROOM CORE INSTALLATION)

- 1. Slide the idler-bearing lock collar over the idler shaft.
- 2. Install the idler shaft into the idler bearing using a mallet to seat it to its maximum depth.
- 3. Use the skid steer/loader to raise the attachment off the ground. Raise the feet to the top position.
- 4. Using the skid steer/loader, lower the attachment until the idler-bearing mounting plate can be bolted into place.
- 5. slide the motor drive into the broom core and use the skid steer/loader to adjust the attachment height until the motor mount can be bolted into place.
- 6. tighten the lock collar onto the idler bearing in the counterclockwise rotation using a hammer and punch.
- 7. Use an hex wrench to tighten the set screw on the lock collar.
- 8. Rotate the bumper back into position, install the two (2) bolts removed in the core removal process, and tighten the bolts' two (2) loosened bolts.

WARNING / Ensure all bolts have been adequately tightened before using the attachment. Failure to tighten all bolts could result in damage to the equipment or serious injury.



#### MAINTENANCE (MOTOR REPLACEMENT)

#### Motor Replacement

In the case of motor failure, perform the following steps to replace the hydraulic motor.

- 1. Perform the "Maintenance Shutdown Procedure" stated on page 9.
- 2. Begin the motor replacement process by removing the broom core. See "Removing the Broom Core" for more details.
- 3. Disconnect the hydraulic hoses from the motor, collecting any hydraulic oil in an oil pan or other containment method.

TIP: Mark the forwardmost hose connected to the motor with a paint pin or other marking method for easier reinstallation.

NOTE: See your local regulations for proper waste oil disposal.

- 4. Remove the four (4) bolts attaching the motor to the motor mounting plate and remove the motor.
- 5. Use an hex key to remove the set screw from the square drive on the motor's shaft.
- 6. Carefully slide the square drive off the motor shaft. When the square drive is removed, the motor shaft key will fall out of the retention slot. DO NOT lose the motor shaft key. Failure to reinstall the key could result in damage to the attachment.
- 7. Reinstall the motor shaft key, square drive, and set screw to the new motor. ALWAYS add a red thread locker to the square drive set screw.
- 8. Slide the motor into the mounting plate and reinstall the four (4) bolts to attach the motor to the mount.
- 9. Reconnect the hydraulic hoses and ensure that the hoses are installed in the correct motor ports and are adequately tightened.



10. Perform the broom core installation Process to reassemble the attachment. See "Broom Core Installation" for more details.



BBA72N

#### MAINTENANCE (IDLER BEARING REPLACEMENT)

#### **Idler Bearing Replacement**

In the case of idler bearing failure, perform the following steps to replace the idler bearing.

- 1. Perform the "Maintenance Shutdown Procedure" found on page 9.
- 2. Begin the motor replacement process by removing the broom core. See "Removing the Broom Core" for more details.
- 3. Remove the four (4) bolts that attach the idler bearing to the bearing mounting plate.
- 4. Install the new bearing to the mounting plate with the grease zerk facing away from the operator's position.
- 5. Perform the broom core installation Process to reassemble the attachment. See "Broom Core Installation" for more details.



#### MAINTENANCE (WATER SYSTEM)

#### Water System Maintenance

The 40-gallon water system is an optional add-on and requires daily maintenance.

Check water system filters, nozzle screens, and cycle system daily.

Ensure the system is drained during storage or freezing weather.



Failure to drain the water system can result in damage to the system.

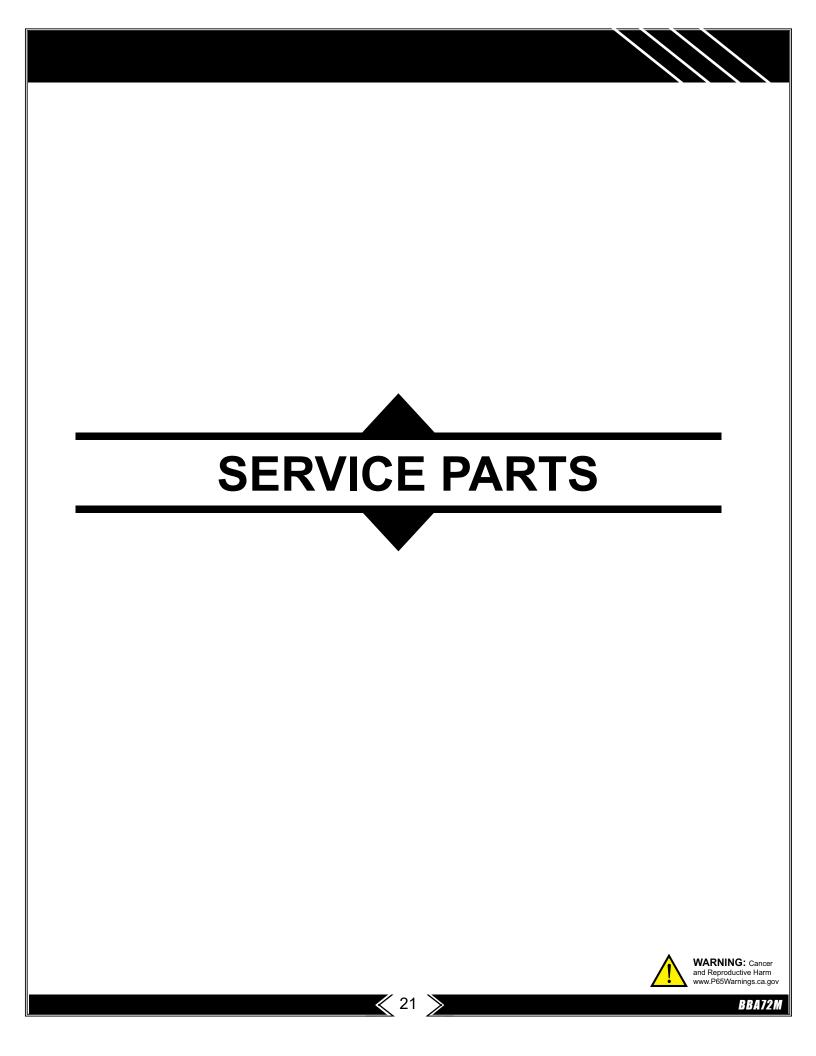
To drain the water system, unscrew the strainer cap, allowing water to drain out of the tank.



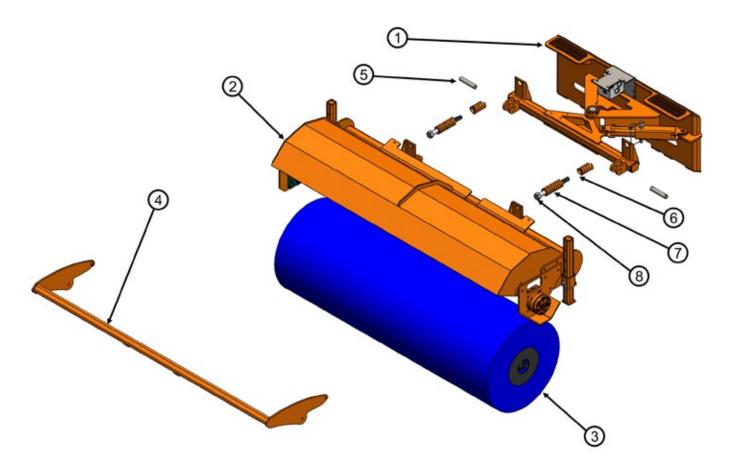
# **MAINTENANCE** (TROUBLESHOOTING)

PROBLEM	PROBABLE CAUSE	SOLUTION
Core motor shaft seal leak	1. String line wrapped around shaft	1. Remove string line and reseal motor
	2. Excessive down pressure	
	(Too much side load)	2. Reseal motor. Instruct operator
		to use down pressure only when
		necessary.
Core motor shaft broken	1. Excessive down pressure (Too much side load)	1. Replace motor. Instruct operator to use down pressure only when necessary.
Brush is Stalled	1. Flow from Skid Steer is Backwards	1. Reverse flow
	2. Valve pressure relief set to low	2. Call customer service for pres- sure setting



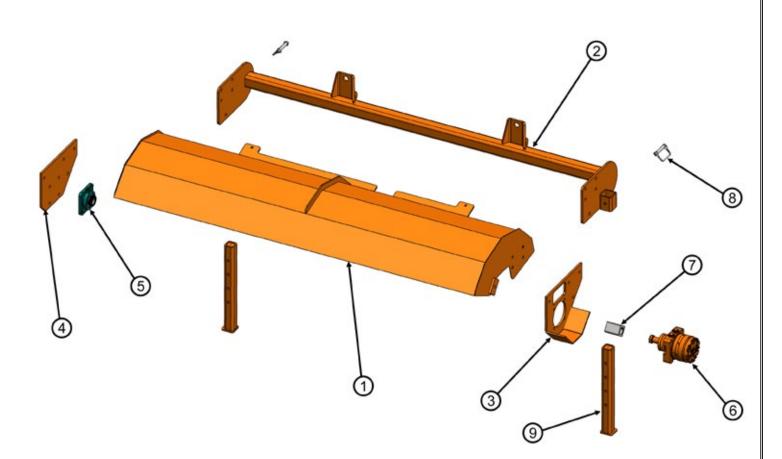


#### PARTS (FULL ASSEMBLY BREAK DOWN)



ITEM #	PARTS #	DESCRIPTION	QTY.
1	N/S	See "Pivot Assembly"	1
2	N/S	See "Cover Assembly"	1
3	N/S	See "Core Assembly"	1
4	800330	72" Angle Broom Bumper	1
5	1407	Core Hinge Pin	2
6	200341	72" & 84" Outside Spring	2
7	200338	Inside Spring	2
8	200334	Spring Guide Bolt	2
N/S	200571	Spring Guide Bolt Washer	4
N/S	447672	Spring Guide Bolt Nylock	2
		N/S* = Not Shown	

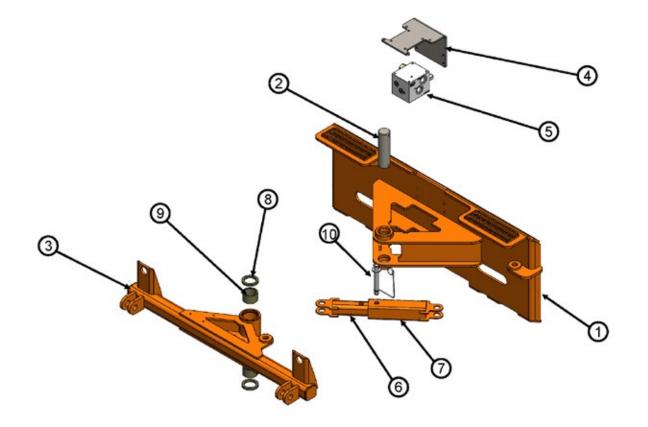
### PARTS (COVER ASSEMBLY)



ITEM #	PARTS #	DESCRIPTION	QTY.
1	800345	72" Angle Broom Cover	1
2	800344	72" Angle Broom C Frame	1
3	390040	LH Core Motor Mount	1
4	202526	Idler Mounting Plate	1
5	320221	Idler Bearing	1
6	390535	Hydraulic Motor	1
7	389674	Block Broom Drive	1
8	200335	Wire Lock Clevis Pin	2
9	800323	Feet Assy	2



# **PARTS** (PIVOT ARM ASSEMBLY)

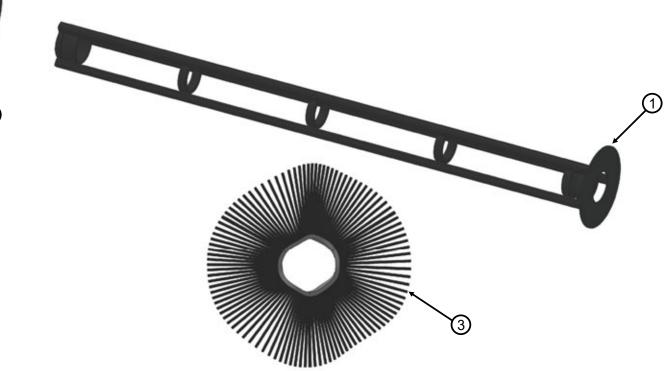


ITEM #	PARTS #	DESCRIPTION	QTY.	
1	800310	Mechanism w/o Core Assy	1	
2	200332	Pivot Pin	1	
3	800316	Mech Float Hinge Portion	1	
4	200574	Manifold Mount	1	
5	200331	hyd. Angle Valve	1	
6	800354	Internal Manual Slider Assy	1	
7	800355	External Manual Slider Assy	1	
N/S	15768	Cylinder Pin	1	
8	513237	Dust Seal	2	
9	501601	Garmax Bushing	2	
10	15769	3/4 slider pin	1	
	N/S* = Not Shown			



#### PARTS (CORE ASSEMBLY)

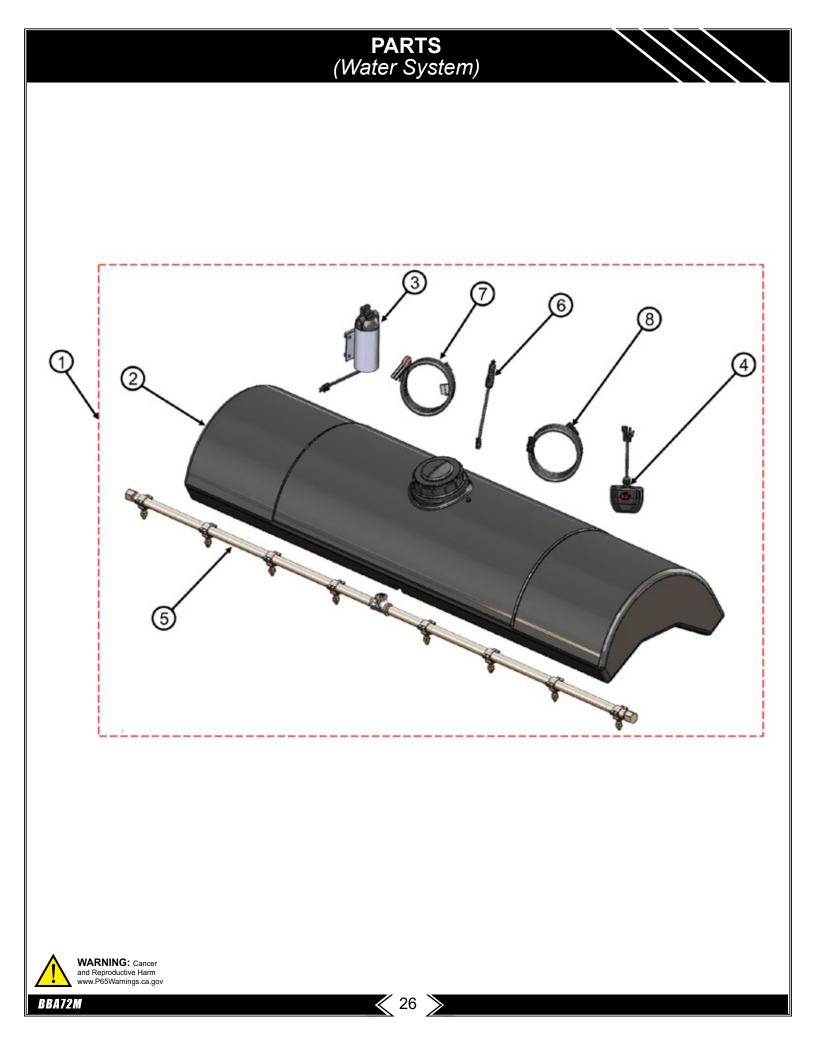




ITEM #	PARTS #	DESCRIPTION	QTY.
1	390620	72" Broom Core	1
2	391157	Idler Bearing Assembly	1
3	200456	24" x 72" Wafer Kit	1





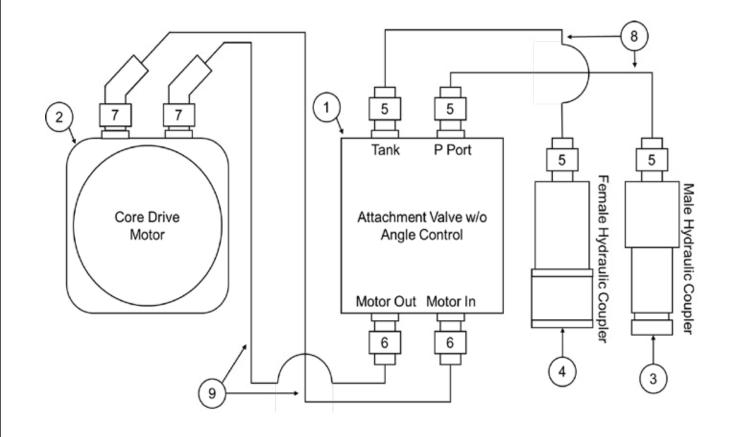


### **PARTS** (Water System Cont.)

ITEM #	PARTS #	DESCRIPTION	QTY.
1	200625	72" M Water Kit	
2	800328	Tank	1
3	200433	Water Pump	1
4	391102	hyd. Angle broom Control Box w/ Spray	1
5	200425	Spray Bar Assy	1
6	200432	Power Wire (Cig. Outlet)	1
7	200430	Power Wire (Battery)	1
8	200431	Hydraulic Angle Broom Main Wire	1
N/S	200406	Tank Strap	2
N/S	389802	Inline Strainer	1
N/S	389808	1/2 pvc Check Valve	1
N/S	200401	Angle Broom Water Hose, Tank to Ball Valve	1
N/S	200402	Angle Broom Water Hose, Pump to Check Valve	1
N/S	200403	Angle Broom Water Hose, Check Valve to Spray Bar	1
N/S	389799	3/4 mnpt - 1/2 90 deg	1
N/S	514411	1/2 Hose Clamp	6
N/S	389798	3/4 mnpt - 1/2 barb STR	2
N/S	389809	3/4 pvc Ball Valve	1
N/S	389812	3/4 Close Nipple	1
N/S	389813	bushing 3/4 mnpt - 3/8 FMPT	1
N/S	389811	3/8 close nipple	1
N/S	389483	Fitting 3/8 mnpt - 1/2 barb STR	1
N/S	389810	1/2 mnpt - 1/2 barb STR	1
N/S	401215F	J-Bolt Water Tank Strap	2
N/S	426080	5/16 - 18 Nylock Nut	2
N/S	442203	5/16 - 18 x 1" Self Tapper	2
N/S	10363	5/16 - 18 x 1.75 Hex Head Bolt	3
N/S	10561	5/16 Lockwasher	3
N/S	36392	1/4 - 20 Nylock	2
N/S	389873	1/4 - 20 x 1.5 U-bolt	2
		N/S* = Not Shown	



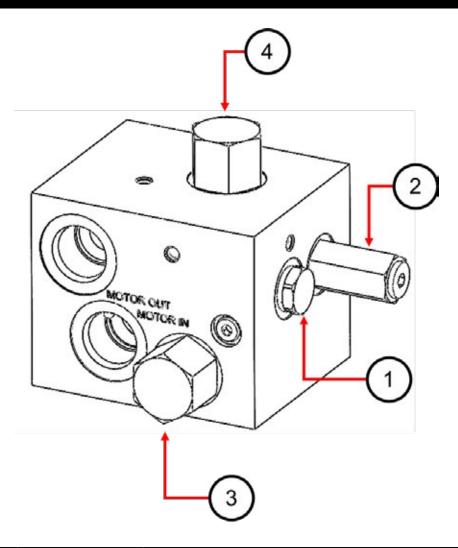
### SCHEMATICS (Hydraulic Diagram)



ITEM #	PARTS #	DESCRIPTION	QTY.
1	391101	Attachment Valve w/o Angle Control	
2	390535	Core Drive Motor	
3	391107	Male Hydraulic Coupler	
4	391107F	Female Hydraulic Coupler	1
5	389488	Adapter, 12 mfs - 12 morb STR	4
6	390018	Adapter, 10 mfs - 12 morb STR	2
7	389826	Adapter, 12 mfs - 10 morb STR	
8	391190	Angle Broom Inlet and Outlet Hose	2
9	391187	84" Manual Angle Broom Motor In and Out Hose	2



## VALVE BREAKDOWN



ITEM #	PARTS #	DESCRIPTION	QTY.
1	200563	Anticav Valve	1
2	200564	Relief Valve	1
3	200565	Flow Control	
4	200266	Compensator	1



DECALS





3

WARNING: This product can expose you to chemicals including toluene, carbon black, cumene and ethylbenzene, which is know to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to: www.P65Warnings.ca.gov







(5)



WWW.BROCEBROOM.COM

30 🔪



## DECALS

ITEM #	PARTS #	DESCRIPTION	QTY.
N/S	200483	BBA72M Decal Kit	1
1	200501	Safety Decal - Pinch Point Hazard	2
2	390185	American Flag	1
3	312095	Prop 65	1
4	200365	Swirl Broce Broom Logo Decal 2	
5	200506	Safety Decal - Flying Objects 2	
6	443581	No Riders	2
7	200372	BBA72M Front Logo Decal	2
8	200373	BBA72M Side Logo Decal	



## SERVICE PARTS TO STOCK

DESCRIPTION	
24" wafers	
Bumper	
Motor	
Idler bearing	



NOTES	
	WARNING: Cancer and Reproductive Harm www.P65Warnings.ca.gov
< 33 >	BBA12M



#### CALIFORNIA Proposition 65 Warning

Diesel engine exhaust and some of its constituents are know to the State of California to cause cancer, birth defects, and other reproductive harm. For more information, vist: **www.P65Warnings.ca.gov** 

**WARNING:** Battery posts, terminal and related accessories contain lead and lead compounds, chemicals know to the State of California to cause cancer, birth defects, and other reproductive harm. Wash hands after handling. For more information, vist: **www.P65Warnings.ca.gov** 

Broce Manufacturing Co. Inc. - 1460 South 2nd Avenue - Dodge City, KS 67801 (877) 227-8811 - FAX (620) 227-3012 - parts@brocebroom.com M-F 7:00 AM-6:00 PM CST

## 1-866-283-2759

## www.brocebroom.com