

Operator's Manual

SITE PREP TRACTOR BRUSH CUTTERS

144 Super M-AX

WHY READ THIS MANUAL?

Before operating your new Brush Wolf brush cutter, read this entire manual to understand **1) safety precautions, 2) operating instructions, and 3) maintenance schedule** to help keep you safe and your equipment running smoothly for years to come.



TAKE A MINUTE TO WRITE DOWN THE FOLLOWING INFORMATION
FOR FUTURE SERVICE, REPAIR, AND WARRANTY INQUIRIES.

OWNER REFERENCE INFORMATION

DATE OF PURCHASE _____

MODEL NO. _____

SERIAL NO. _____

DEALER NAME _____

SALES REP NAME _____

DEALER PHONE NO. _____

DEALER EMAIL _____

DEALER ADDRESS _____

THANK YOU

Welcome to the Brush Wolf family!

You've made a smart choice! We hope you love your brush cutter as much as we love making it. If you have any issues, please contact us at any time. We're here to help.

Brush Wolf

218-692-1050

info@brushwolf.com

brushwolf.com

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SAFETY FIRST!

FOR YOUR SAFETY, READ THESE INSTRUCTIONS.

The following safety instructions are provided to alert you to precautions that, if not followed, may cause serious injury to yourself or to others. Please read these instructions completely. Brush Wolf cannot cover every incident that might be a hazard. Extreme caution should be used at all times. Only use your Brush Wolf brush cutter for the purpose for which it has been designed.

SITE INSPECTION

Before operating your brush cutter, carefully inspect the area to be cleared. Remove any items that may be picked up and thrown by the cutting blades, such as wire, pipes, rocks, etc. Mark objects that are too large to move. This is an important step to avoid personal injury, damage to property, the brush cutter, or your site prep tractor. If an object is struck while operating the brush cutter, immediately shut down power to both the brush cutter and the site prep tractor. Any damage should be corrected and tested before the continuation of cutting.

AUXILIARY HYDRAULIC FLOW

Check the specifications of your brush cutter's rated gallons per minute (GPM) to correctly match the hydraulic flow of your machine to ensure proper operation.

EQUIPMENT INSPECTION

To inspect or to make repairs under the 144 Super M-AX cutter deck, always block the unit securely to prevent accidental release of the lift mechanism.

Inspect all hydraulic hoses and shields to ensure they are in good condition and without holes before pressurizing. Hydraulic fluid can escape under pressure and may cause serious injury or death. If this type of injury occurs, seek medical attention immediately.

SAFETY GEAR

Wear safety goggles, hearing protection, and a hard hat.

DO NOT operate within near bystanders, vehicles, pets, livestock, or buildings. Objects may discharge while cutting with the brush cutter and has the potential to cause serious injury.

DO NOT operate the brush cutter until everyone on your work crew is alerted to the dangers of walking up to the brush cutter while in operation.

DO NOT operate the brush cutter in conditions with poor visibility.

DO NOT operate while intoxicated or if taking medications that may impair your senses or reactions.

DO NOT allow children to operate the brush cutter. Only individuals with site prep tractor experience who are well acquainted with the rules of safe operation should be allowed to operate the brush cutter.

DO NOT place hands, feet, or other objects under the deck while the brush cutter is in operation. To inspect or perform maintenance under the deck, always shut down the power to the brush cutter and shut-off the site prep tractor engine.

DO NOT raise the mower deck while blades are rotating. Operation with the mower raised will expose the cutting blades and may cause serious injury or death to yourself or others.

DO NOT allow anyone or any item on top of the mower deck while in operation.

DO NOT expose the underside of the blades towards the cab while in operation.

DO NOT continue operation if an unexpected object is struck. IMMEDIATELY shut down power to both the brush cutter and the site prep tractor. Evaluate the damage, repair, and then test the unit before operation.

DO NOT leave the brush cutter unattended while in a raised position. Always make sure both the runners are placed firmly on the ground and shut down the site prep tractor.

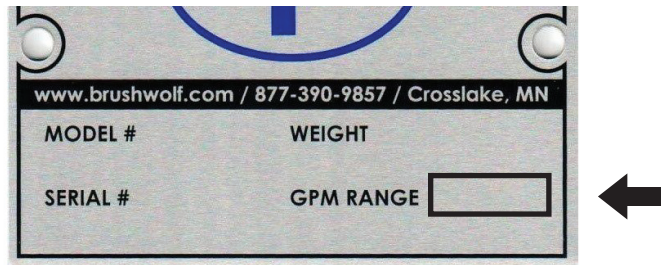
DO NOT attempt to straighten blades. Order replacement blades if blades are bent, cracked, or damaged.

OPERATING YOUR BRUSH CUTTER

▶ START HERE

Verify your site prep tractor's hydraulic flow to ensure it is within the brush cutter's rating range. The brush cutter's gallons per minute (GPM) rating is located on the serial tag of the brush cutter.

FIGURE 1: SERIAL TAG



▶ IMPORTANT: CHECK THESE ITEMS PRIOR TO OPERATING

CHECK BLADES

Inspect blades to ensure they are sharp, tightened correctly, and intact. Look for damage, dullness, and cracks. Replace if cracked or damaged. All blades on the blade carrier must be replaced at the same time.

CHECK HYDRAULIC FLUID

A low level could indicate a leak and require a closer inspection of your unit.

CHECK NUTS & BOLTS

Tighten the blade carrier to the bearing housing, blade bolts/nuts, and hydraulic motor mount nuts.

INSPECT THE DRIVE COMPONENTS

Remove any foreign material.

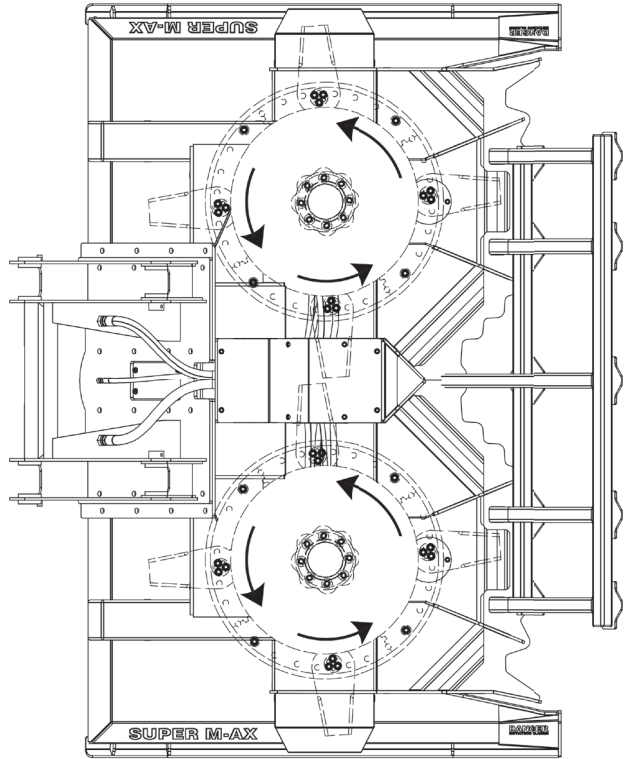
▶ CONNECTING THE BRUSH CUTTER

- 1) To attach the 144 Super M-AX, pull the site prep tractor up to the cutting head. Cutting head can be set up with either a pin on or quick attach style pick-up plate. Ensure that the upper and lower linkage pins are secured in place, or that the quick attach mount is properly engaged.
- 2) Route the auxiliary and electrical hoses so the hoses avoid ground contact or interference with the loader arms. Lift and tilt the brush cutter through its full range of motion to ensure hose length is correct and no pinching or binding occurs.
- 3) Inspect the hydraulic couplers and wipe off water, dust, or any debris. Once cleaned, connect the couplers from the cutter to the auxiliary hydraulic system on the site prep tractor.
- 4) Inspect hoses for leaks and ensure hydraulic couplers have a secure fit.
- 5) Confirm all safety measures have been completed per the Safety First! section (pages 2-3). Most importantly, make sure the area is clear of people and pets.

▶ OPERATING STEPS

- 1) Enter the shatter-proof cab door, engage the seat belt, release the brake, and start the engine. The runners of the brush cutter should be as close to the ground as possible. **Never raise the brush cutter more than seven (7) inches off the ground while in operation.**
- 2) Slowly apply auxiliary hydraulics and check for proper blade rotation. Blades should spin counterclockwise as viewed from above (see Figure 2). If blade rotation is incorrect, check hydraulic lines for proper connection (see Hose Connection Detail on page 16).
- 3) Slowly apply hydraulics to the brush cutter and increase the engine speed to high idle. Make sure the unit is operating smoothly before moving the site prep tractor forward.
- 4) Maintain a speed to handle the volume of brush and to prevent stalling.
- 5) Stay alert for drop-offs, rocks, holes, abandoned wells, and septic tanks. Do not operate or drive across a steep embankment, as this may cause a rollover and possible injuries or death.
- 6) To **cut large-diameter brush and trees**, move forward slowly to make the cut.

FIGURE 2: BLADE ROTATION
COUNTERCLOCKWISE



▶ WHEN DONE CUTTING

When done, make sure the cutter is placed flat on the ground and throttle down on the site prep tractor. **Wait until the blades come to a complete stop** before the hydraulic flow is shut off to the unit, stop the engine and engage the parking brake.

MAINTENANCE

BRUSH WOLF BRUSH CUTTERS ARE BUILT TO STRICT STANDARDS AND WILL DELIVER YEARS OF DEPENDABLE SERVICE WHEN YOU FOLLOW THESE MAINTENANCE GUIDELINES...

► MAINTENANCE SCHEDULE

See pages 8-9 for details.

ITEM	BEFORE EACH USE	DAILY OR EVERY 8 HOURS	AS NEEDED
Blades	Inspect		
Bearing Housing Lubricant	Check Oil		
Blade Bolt/Nuts		(4) Flat-Blade Carrier: torque 270 ft-lbs	
Blade Carrier to Bearing Housing Bolts		Torque to 380 ft-lbs	
Hydraulic Motor Mount Bolts		Torque to 75 ft-lbs	
Bearing Housing	Inspect		
Hoses, Fittings & Hose Safety Shield	Inspect		
Brush Cutter			Clean

CAUTION: Perform maintenance on a level surface with the unit firmly on the ground. Shut off the hydraulic power supply.

DO NOT loan your brush cutter to another site prep tractor owner. The potential exists for hydraulic contamination and could shorten the life of your site prep tractor or the hydraulic motor on your brush cutter. Contamination of the hydraulic motor voids the warranty.

► BEFORE EVERY OPERATION

❑ INSPECT BLADES

Inspect blades before each use to ensure they are sharp, tightened correctly, and intact. Look for damage, dullness, and cracks. Blades should rotate freely and be clear of obstructions. Replace the entire set of blades if damaged.

CAUTION: Always replace the entire set of blades. Never weld or straighten damaged blades, as loss of blade integrity may result.

❑ CHECK HYDRAULIC HOSES

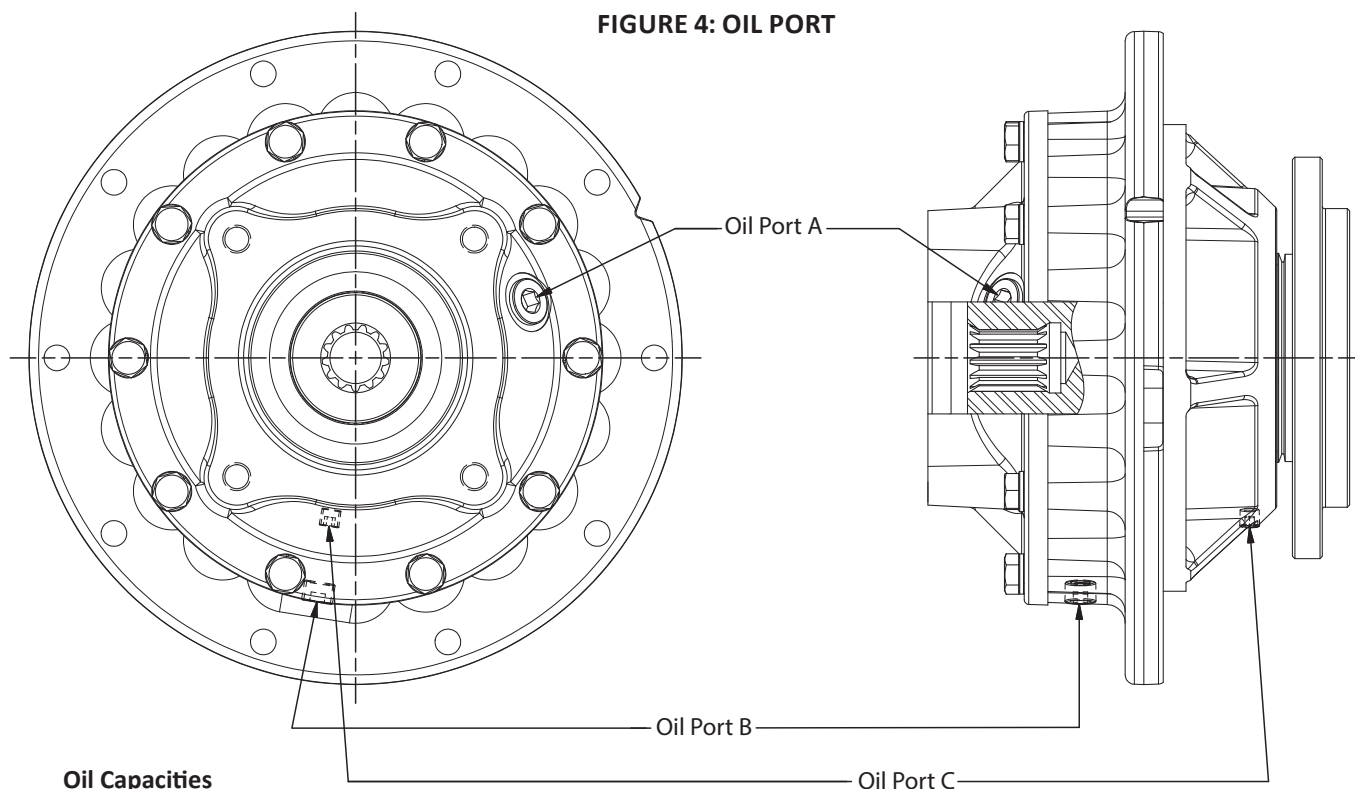
Check hoses and hose fittings for leaks and/or proper tightness.

❑ INSPECT THE DRIVE COMPONENTS

Inspect before each use and remove foreign material.

❑ CHECK THE BEARING HOUSING FOR PROPER LUBRICANT

Remove the bearing housing plug "A". The reservoir is full when the oil level is filled to oil port "A" (see Figure 4). Loss of fluid could be indicative of a leak. When adding oil use grade GL-5 EP 80 W 90 weight - DO NOT overfill as too much lubricant will rupture the bearing housing. 4 pints maximum when empty.



Oil Capacities

Mounting Position	
Vertical Spindle Down	17 oz/.50 L Fill to Oil Port A while held in horizontal position as shown

► BEFORE EVERY OPERATION

CHECK NUTS & BOLTS

Every Brush Wolf brush cutter is tested at the factory and all nuts and bolts have been tightened to specifications. We recommend you check the nuts and bolts after the first 4 to 6 hours of operation; then daily or every eight (8) hours.

Tighten the nuts that secure the blades to the blade carrier every eight (8) hours.

For the (4) Flat-Blade Carrier: torque to 275 ft-lbs with a 1-1/8" socket wrench. AND Torque the puck bolts to 100 ft-lbs.

The nuts are located under the access plate on the top of the blade carrier (see Figure 5).

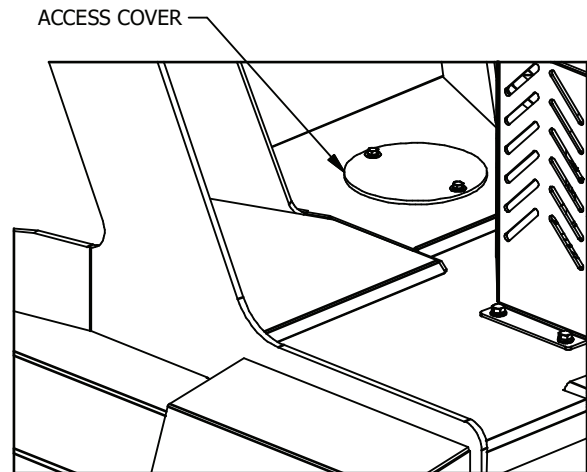
Also, tighten the nuts holding the blade carrier to the output shaft of the bearing housing, torque to 380 ft-lbs with a 15/16" socket wrench.

Tighten bearing housing mounting bolts daily or every eight (8) hours. Torque the bolts to 230 ft-lbs.

Tighten hydraulic motor mount bolts daily or every eight (8) hours. Torque the bolts to 75 ft-lbs.

Torque the block bolts to 100 ft-lbs.

FIGURE 5: ACCESS COVER



► AS NEEDED

- CLEAN THE BRUSH CUTTER** as needed and look for potential damage or obstruction that could result in poor performance.
- Make sure all **SAFETY DECALS** are visible. Replace missing or illegible safety decals immediately. Decals are available through Brush Wolf by calling 218-692-1050 or through any Brush Wolf dealer.

TROUBLESHOOTING

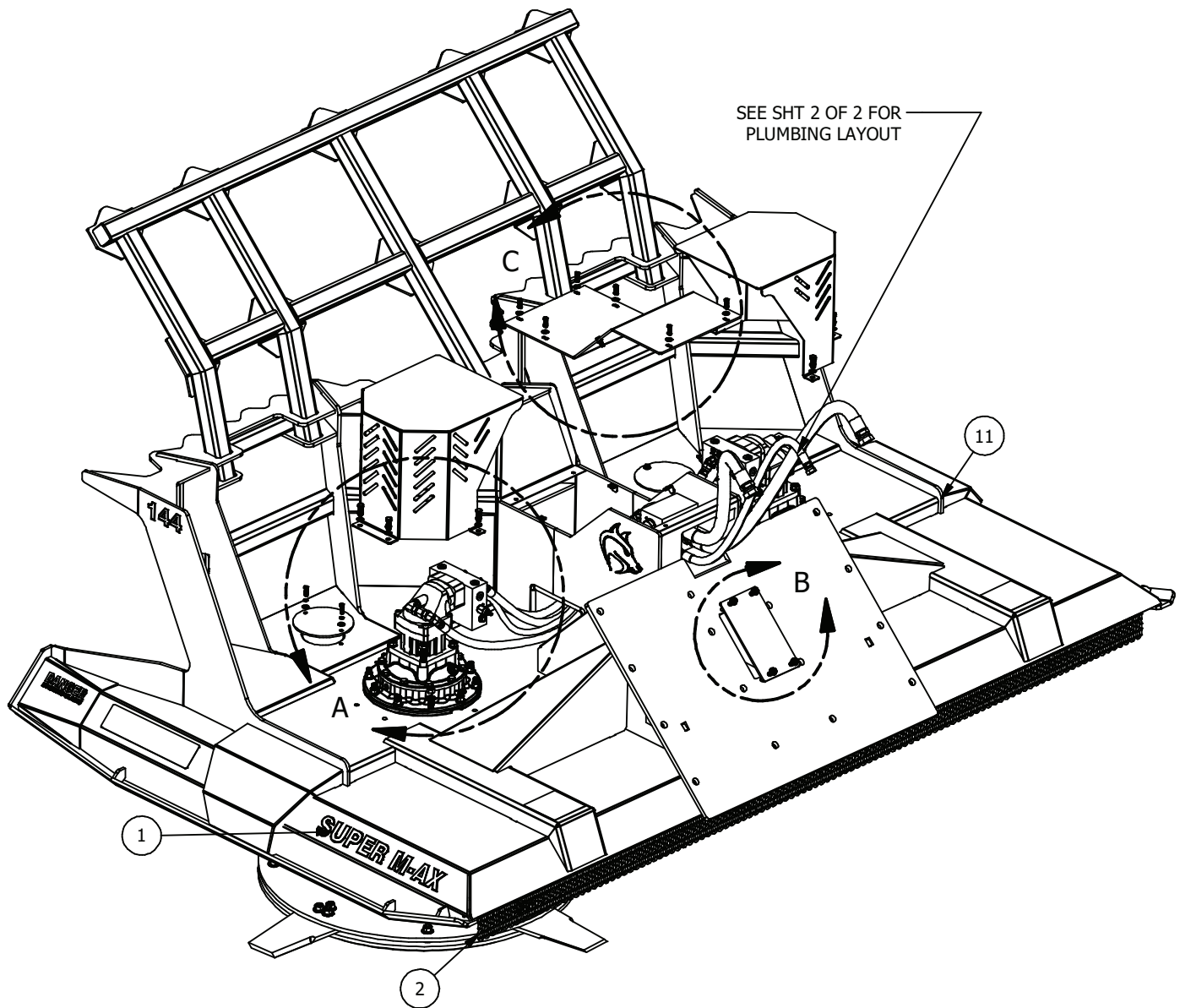
WHEN PERFORMING MAINTENANCE, SHUT DOWN THE TRACTOR AND BLOCK THE UNIT. CONSULT YOUR DEALER OR CONTACT BRUSH WOLF FOR ANY QUESTIONS OR ADDITIONAL HELP.

ISSUE	POTENTIAL CAUSES
Loss of Power	<ul style="list-style-type: none">• Low hydraulic fluid level• Overheated hydraulic fluid*• Contaminated hydraulic fluid*• Low gearbox lubricant level
Excessive Unit Vibration	<ul style="list-style-type: none">• Dull, broken, or damaged blades• Blade carrier out of balance• Loose nuts and bolts• New blade or bolts matched with worn blade or bolts• Wire or rope wrapped around blades
Leaking Oil	<ul style="list-style-type: none">• Loose hydraulic connections• Ruptured hydraulic motor seals**• Loose or missing motor drain plug• Leaking from motor safety valve: check case drain line for proper connection• Leaking from bearing housing safety valve: blown motor seal

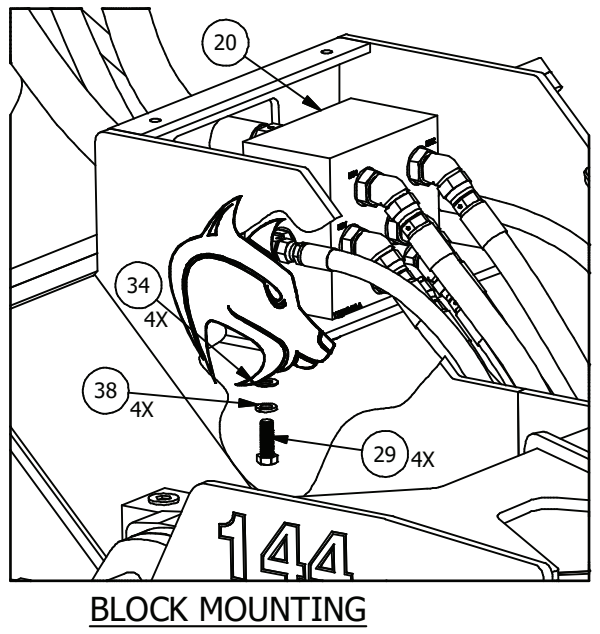
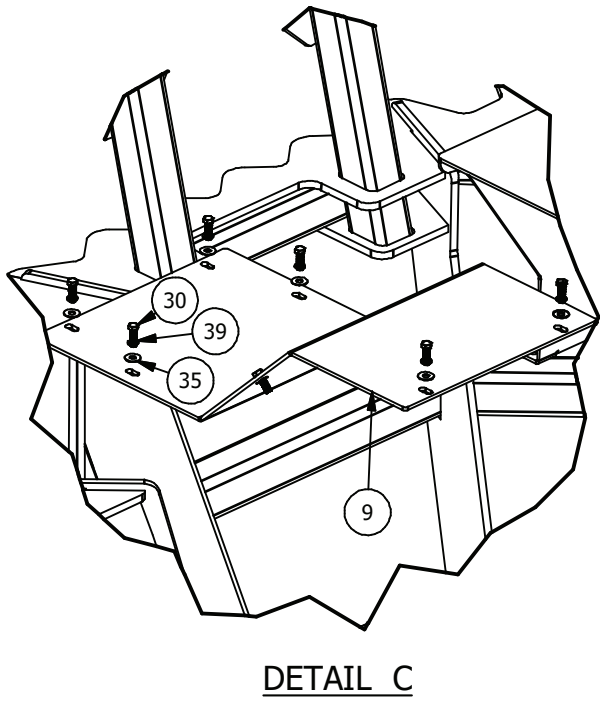
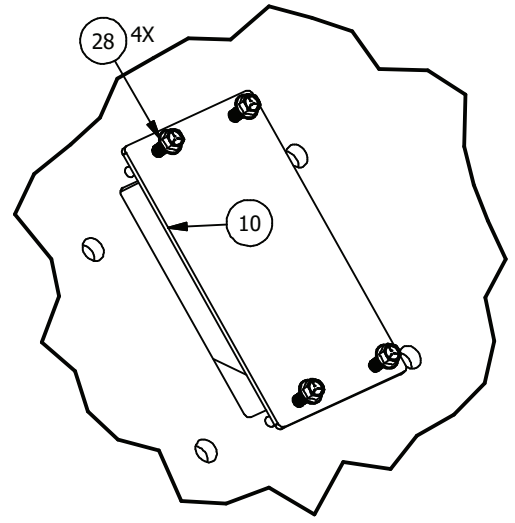
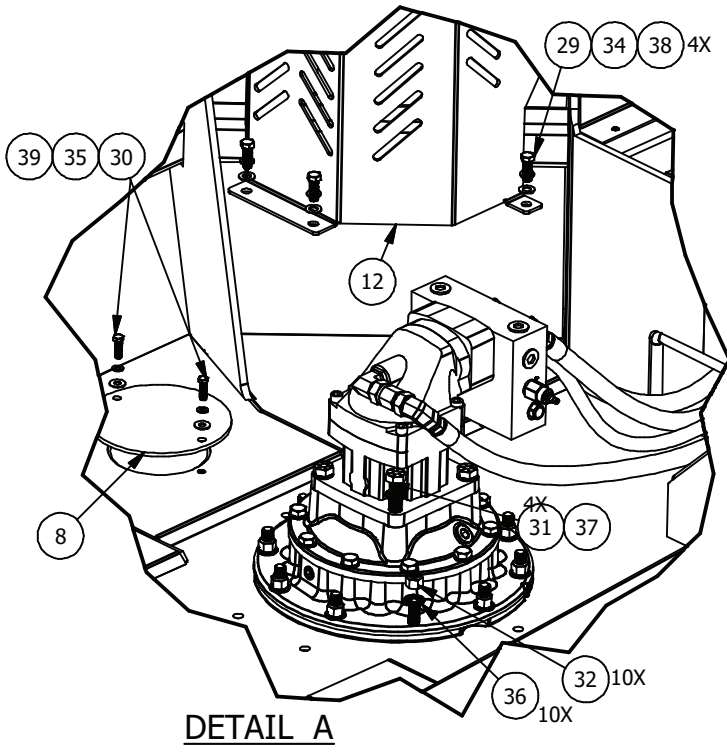
*May damage hydraulic motor and void warranty.

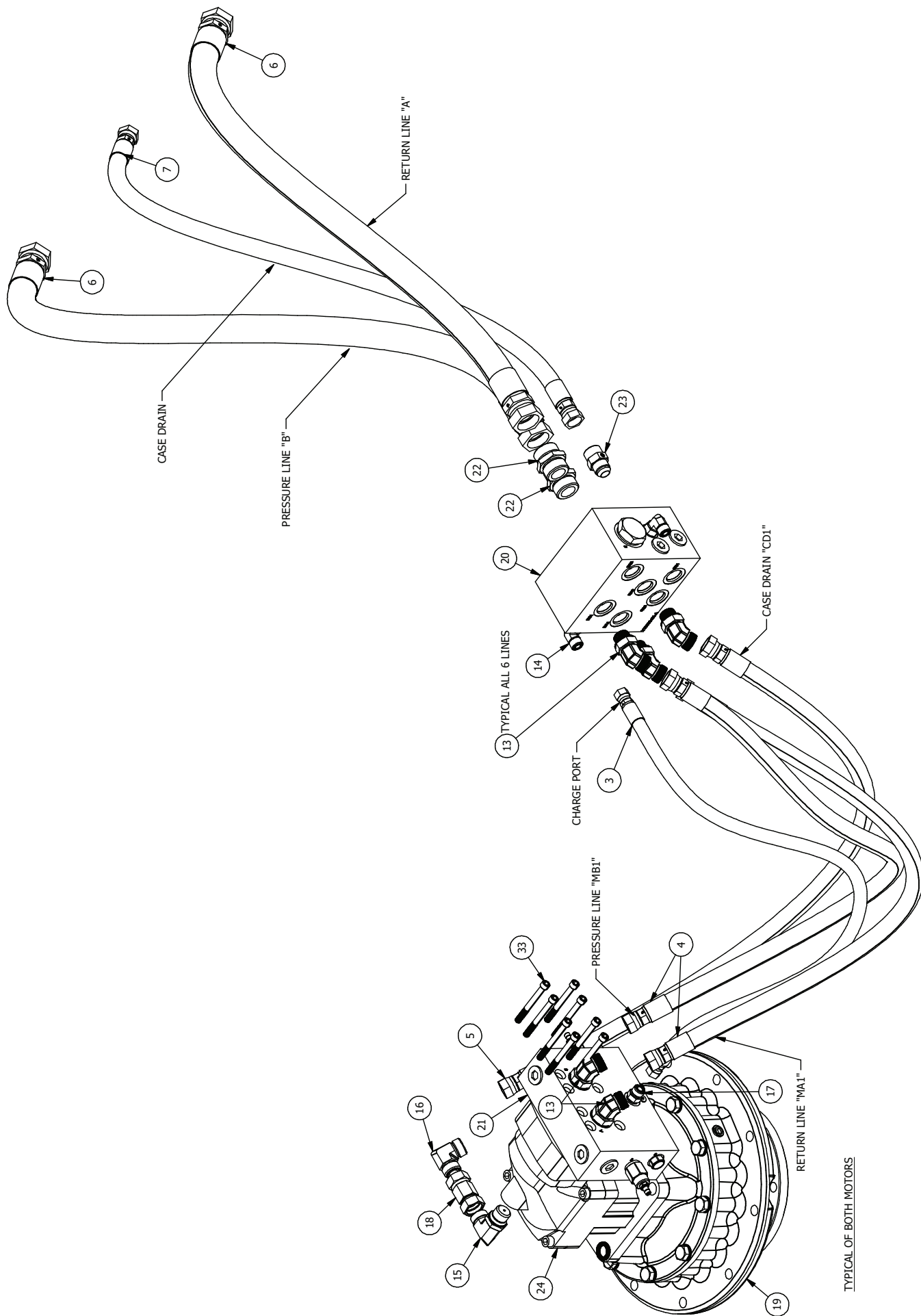
**The bearing housing is equipped with a 5 psi check valve on the fill plug to save the bearing housing seal should the motor seals become compromised. Some amount of oil seepage may be possible if cutter is run at extreme vertical angles. Excessive leakage from the check valve is indicative of a blown motor seal. Brush cutter should be shut down immediately to keep from compromising the bearing housing seal.

PARTS: 144 SUPER M-AX



LIST OF PARTS LOCATED ON PAGE 13





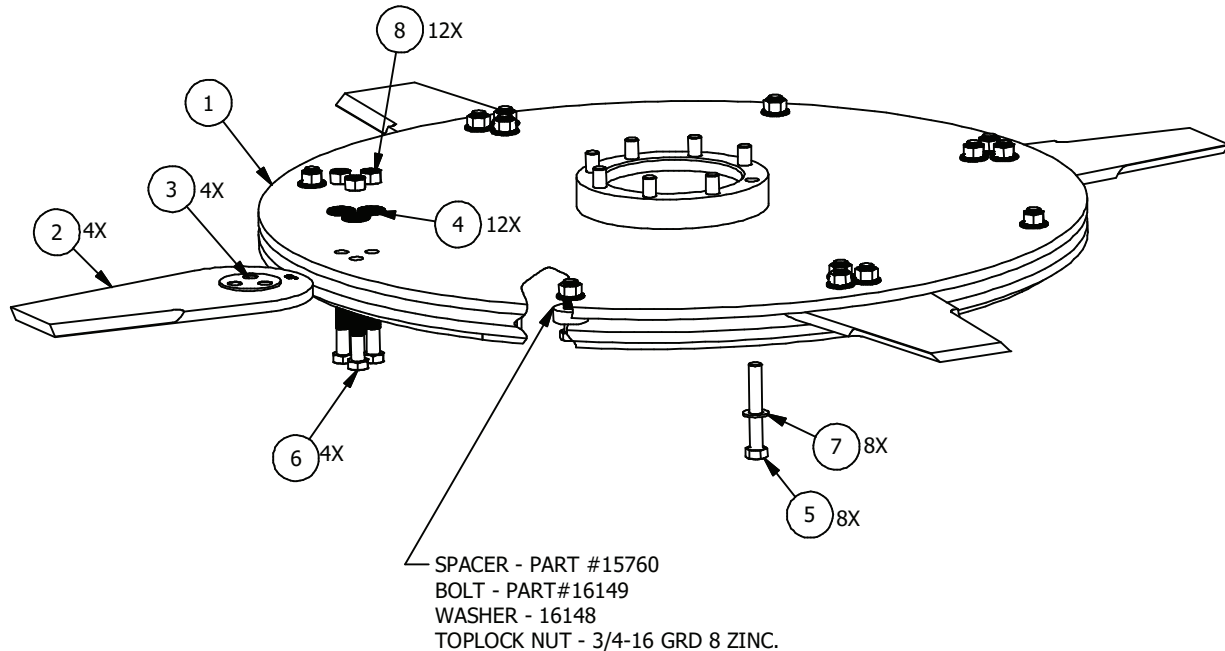
TYPICAL OF BOTH MOTORS

ONLY USE GENUINE OEM PARTS. ORDER PARTS FROM BRUSH WOLF AT **218-692-1050**

ITEM	ITEM QTY	PART NUMBER	DESCRIPTION
1	1	16721	DECAL KIT, 144
2	2	15202	ASSEMBLY, BLADE CARRIER, FLAT, 72
3	2	16016	HOSE WHIP ASSEMBLY, -8 ORFS, FEMALE SWIVEL COUPLINGS, 0.500 X 45.000 HOSE
4	4	16720	HOSE WHIP ASSEMBLY, -12 ORFS, FEMALE SWIVEL COUPLINGS, 0.750 X 62.000, 5000 PSI
5	2	16018	HOSE WHIP ASSEMBLY, -12 ORFS, FEMALE SWIVEL COUPLINGS, 0.750 X 58.000, 5000 PSI
6	2	16145	HOSE WHIP ASSEMBLY, -20 ORFS, FEMALE SWIVEL COUPLINGS, 1.250 X 105.000 5000 PSI
7	1	16143	HOSE WHIP ASSEMBLY, -12 ORFS, FEMALE SWIVEL COUPLINGS, 0.750 X 105.000 HOSE
8	2	16376	PLATE, ACCESS, 2 HOLE, 8.500 RND
9	1	16377	PLATE, ACCESS, CNTR HOUSING, 144
10	1	16378	PLATE, ACCESS, PU PLATE, 144
11	1	16372	WELDMENT, FRAME, 144, SKINNED
12	2	15956	WELDMENT, MOTOR GUARD, 192
13	10	15594	ADAPTER, 45 DEG, #12 MORFS, #10 MORB
14	2	16293	ADAPTER, 90 DEG, #8 MORFS, #8 MORB
15	2	15699	ADAPTER, 90 DEG, #12 MORFS, #12 MORB
16	2	15999	ADAPTER, 90 DEG, #12 MORFS, #12 MORFS
17	2	16073	ADAPTER, STRAIGHT, #8 MORFS, #8MORB
18	2	15998	ADAPTER, STRAIGHT, #12 FORFS, #12 FORFS
19	2	15997	BEARING HOUSING, SAE "D" MOUNT, 3.750 SHAFT, SPINDLE OUTPUT
20	1	16379	BLOCK, CONTROL MANIFOLD, 144
21	2	16121	BLOCK, MOTOR, 192
22	2	16001	ADAPTER, STRAIGHT, #20 MORFS, #20 MORB
23	1	15405	ADAPTER, STRAIGHT, #12 MORF, #12 MORB
24	2	15969	MOTOR, 110CC, SAE "D" 4 BOLT, 1.0625 DIA PORTS, 13T, 8/16 DP SHAFT
25	210"	17001	HOSE WRAP, SPIRAL, 2.000
26	503"	17002	HOSE WRAP, SPIRAL, 1.250
27	90"	17003	HOSE WRAP, SPIRAL, 0.750
28	4	30123	BOLT, HH, FLANGED, 1/2-13 X 1 1/2, GRD 5, ZINC
29	12	30023	BOLT, HH, 1/2-13 X 1 1/2 UNC, GRD 5, ZINC
30	12	30041	BOLT, HH, 3/8-16 X 1 1/4, GRD 5, ZINC
31	8	30034	BOLT_HH_3_4-10X2 1/4 UNC_GRD8
32	20	30067	NUT, NYLOCK, 5/8-18,GRD 8 ZINC
33	8	30076	SCREW, SHCS, 3/8-16 X 3 1/2 GRD8
34	12	30084	WASHER, FLAT, 1/2, ZINC
35	12	30083	WASHER, FLAT, 3/8, ZINC
36	20	15380	WASHER, NORD-LOCK, 0.625 X 1.210 OD, ZINC
37	8	15379	WASHER, NORD-LOCK, 0.750 X 1.210 OD, ZINC
38	12	30093	WASHER, SPRING LOCK, .500, ZINC
39	12	30092	WASHER, SPRING LOCK, 3/8, ZINC

BLADE CARRIER: 72" CENTER SECTION

PART #: 15202



AVAILABLE AS SERVICE PARTS.

ITEM	ITEM QTY	PART NUMBER	DESCRIPTION
1	1	16200	ASSEMBLY, BLADE CARRIER, M-AX, FLAT DISCS
2	4	15097	BLADE, FLAT, 18.000 X 8.500 X 0.625
3	4	15099	PUCK, 3.500 DIA X 0.750, 3 HOLE
4	12	16148	WASHER, NORD-LOCK, 0.750 X 1.540 OD, ZINC
5	8	30037	BOLT, HH, 3/4-10 X 5, GRD 8, ZINC
6	12	16149	BOLT 3/4-16x3 GR 8 LONG SHOULDER
7	8	30087	WASHER, FLAT, 3/4, F436, ZINC
8	12	30070	NUT TOPLOCK 3/4-16 GRD8 ZINC

ONLY USE GENUINE OEM PARTS. ORDER PARTS FROM BRUSH WOLF AT **218-692-1050**

HOW TO REPLACE BLADES

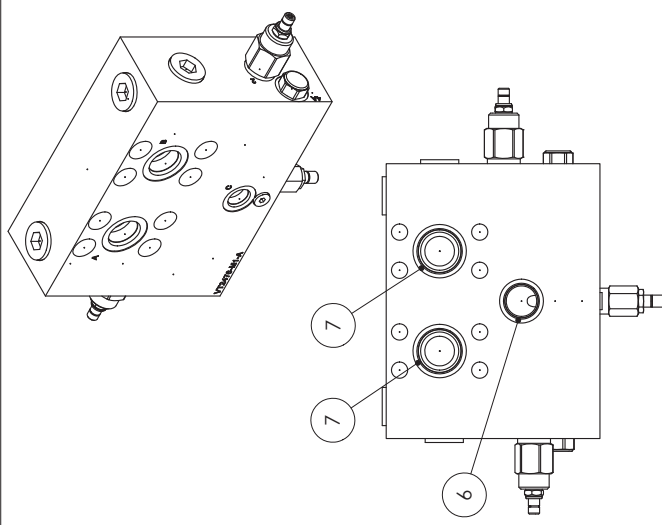
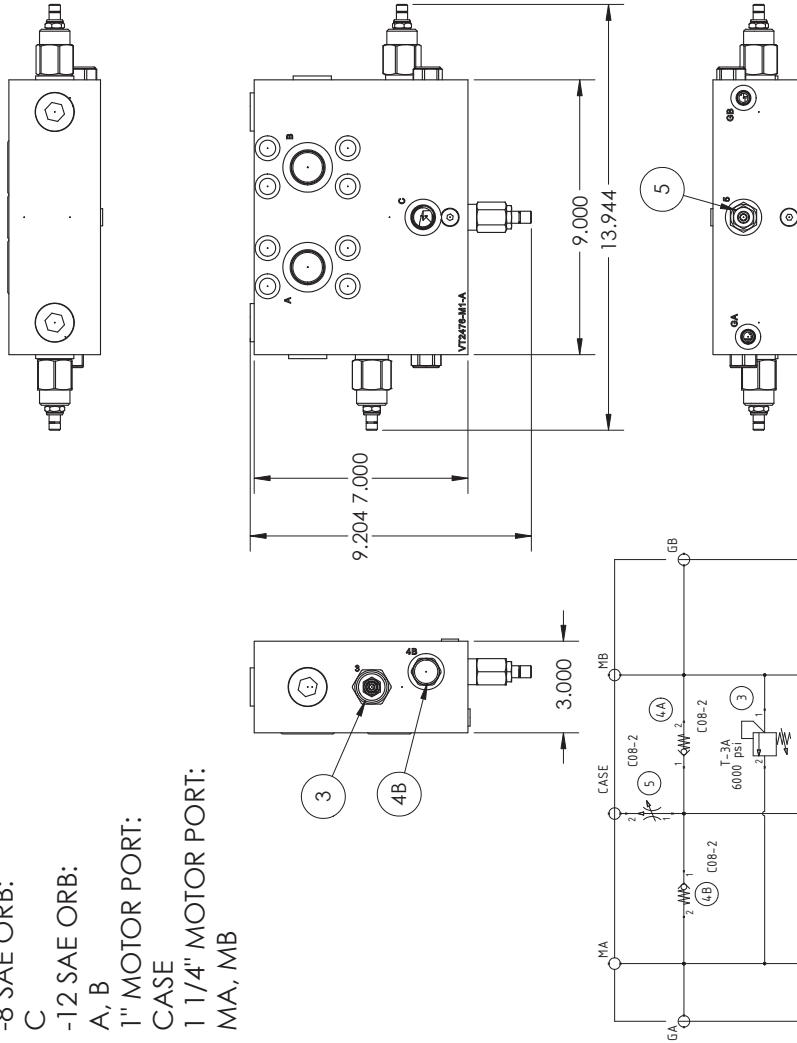
► HOW TO REPLACE (4) FLAT BLADES

Brush Wolf's flat blades are reversible. Just turn over all blade at the same time. When replacing blades, an entire new set of four (4) blades, pucks, bolts and washers must be replaced at the same time. Follow the instructions below. Perform replacement on a level surface with the brush cutter blocked off the ground. Shut off the hydraulic power supply and disconnect hydraulic couplers.

- 1) Take off the access cover (see Figure 6 on page 9) by removing the nuts and washers.
- 2) Through the exposed access hole, rotate the blade carrier to line up the nut of the blade for access.
- 3) Insert a 1-1/8" socket through the access hole and remove three (3) nuts for each blade.
- 4) Pound out the bolt using a drift pin or center punch to prevent damaging the threads.
- 5) Slide puck and blade out.
- 6) Clean blades, pucks, bolts, lock-nuts, and washer with cleaner/degreaser. Prior to assembly, ensure all hardware is dry and free of any contaminants including the carrier assembly.
- 7) Insert the new puck and blade between carrier assembly. Line up with the bolt holes. **Note:** All four blades must be turned over at the same time. If the reverse side of the blades have not been used, turn the blade over. The blade carrier cuts in one direction, counterclockwise. Worn or damaged pucks, bolts, and washers must be replaced in sets.
- 8) Apply Loctite #243 to the first ten bolt threads to ensure coverage.
- 9) Assemble the bolt, washer, and nut to the carrier as shown in the diagram on page 16.
- 10) Torque the blade bolts to 275 ft-lbs.
- 11) Confirm the blade carrier rotates freely and is clear of any obstructions.
- 12) Reinstall the access cover plate.

HYDRAULIC SCHEMATIC

PORT SIZES:
 -4 SAE ORB:
 GA, GB
 -8 SAE ORB:
 C
 -12 SAE ORB:
 A, B
 1" MOTOR PORT:
 CASE
 1 1/4" MOTOR PORT:
 MA, MB



SET VALVE 5 IN A LINE BODY

ITEM NO.	PART NUMBER	DESCRIPTION	TORQUE FT LBS	SETTING	QTY.
1	VT2476-M1-A	MOTOR MANIFOLD			1
2	RDFA-LAN	RELIEF VALVE	47	1000PSI	1
3	RDFA-LCN	RELIEF VALVE	47	6000PSI	1
4A, B	CVH081P	CHECK VALVE	34		2
5	J02E2ZN	PRESSURE COMP FLOW CONTROL	30	3GPM	1
6	217	2-217 O-RING			1
7	222	2-222 O-RING			2
8	6409-4	-4 ORB PLUG			2

REV	ECN	REVISION DESCRIPTION	DATE	BY	PROPRIETARY AND CONFIDENTIAL	PROCESS TOLERANCES:	GEOMETRIC TOL. WHERE NOTED	MATERIAL:	FINISH:	Q.A.	SIZE	DWG. NO.	REV
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VAN-TECH CORPORATION 12600 CREEK VIEW AVE. SAUVAGE, MN 55378 952-808-8629 (FAX) 952-808-8633											BARKO MOTOR MANIFOLD		WEIGHT: 40.56 SHEET 1 OF 1

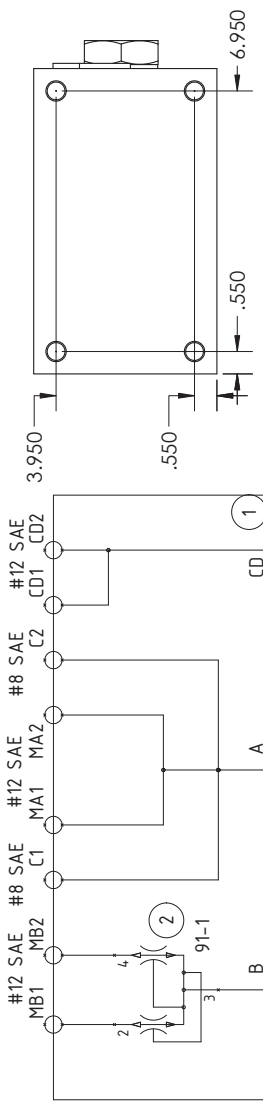
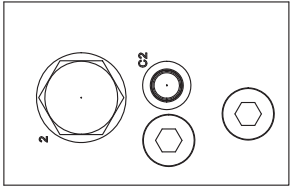
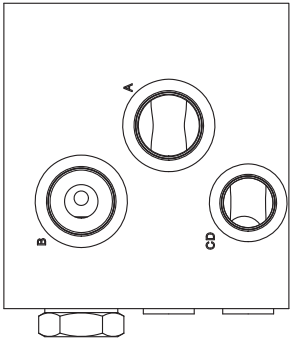
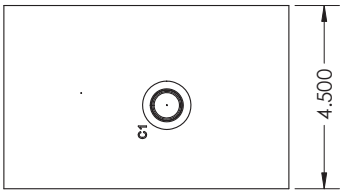
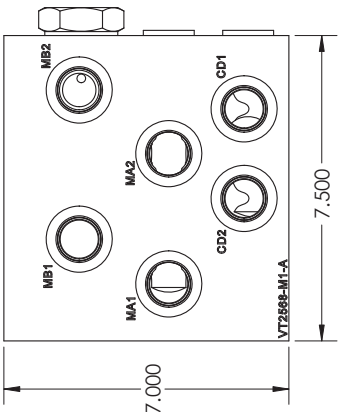
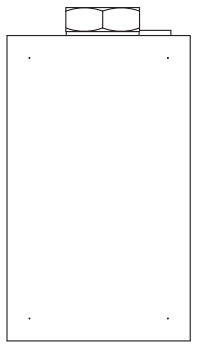
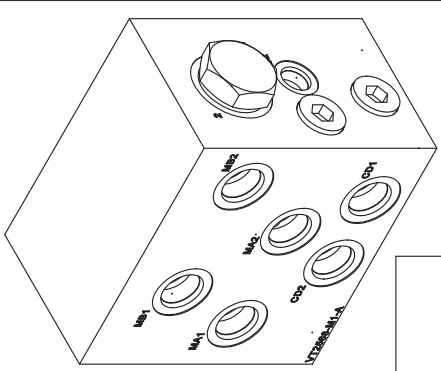
BOLT HOLES:
1/2"-13

PORT SIZES:
-8 SAE ORB:
C1, C2

-12 SAE ORB:
MA1, MA2, MB1, MB2,
CD1, CD2

-16 SAE ORB:
CD

-20 SAE ORB:
A, B



FOR 144" CUTTER

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	VT2568-M1-A	MANIFOLD	1
2	L1A3002305050N	FLOW DIVIDER	1

TITLE: MANIFOLD ASSEMBLY	
MATERIAL: DUCTILE IRON	NAME: ECO
FINISH: CLEAR ZINC	DATE: 5/19/2017
GEOM. APPR.: ECO	DWG. NO.: VT-2568ASY
MFG. APPR.: ECO	REV: A
Q.A.: ECO	WEIGHT: 7.53
SHEET 1 OF 1	

PROCESS TOLERANCES: (UNLESS OTHERWISE NOTED) DIMENSIONS ARE IN INCHES 1 DECIMAL ±.050 2 DECIMAL ±.030 3 DECIMAL ±.010	GEOMETRIC TOL. WHERE NOTED (UNLESS OTHERWISE SPECIFIED)
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REVISION DESCRIPTION	BY ECO	DATE 8/3/2017
PRODUCTION PRINT		

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WARRANTY INFORMATION

PROTECT YOUR PURCHASE.

Warranties are valid from date of purchase with a warranty registration on file. Scan the QR code below or go to brushwolf.com/warranty to file a claim and view warranty details.

5 YEAR
LIMITED
WARRANTY

Structural Components • Materials • Weldment

2-YEAR
LIMITED WARRANTY



Hydraulic Motor

1.5-YEAR
LIMITED WARRANTY



Gearbox



Bearing Housing

