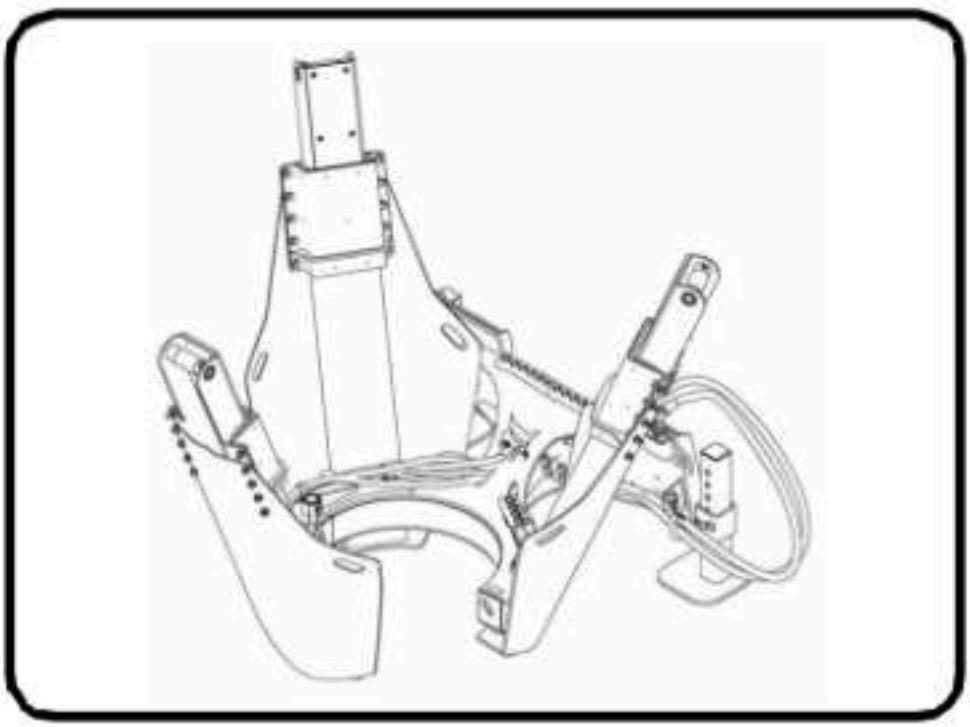
Bobcat

Operation & Maintenance Manual

Tree Spade

(TS24T CONV) S/N A9SK00101 & Above
(TS24T) S/N A9U200101 & Above (Bobcat Only)
(TS24M CONV) S/N A9SN00101 & Above
(TS24M) S/N A9U500101 & Above (Bobcat Only)
(TS24C CONV) S/N A9UW00101 & Above
(TS24C) S/N A9VC00101 & Above (Bobcat Only)
(TS28T CONV) S/N A8WG00101 & Above
(TS28T) S/N A9U800101 & Above (Bobcat Only)
(TS28M CONV) S/N A9RT00101 & Above
(TS28M) S/N A9UB00101 & Above (Bobcat Only)
(TS28C CONV) S/N A9V000101 & Above
(TS28C) S/N A9VE00101 & Above (Bobcat Only)
(TS32T CONV) S/N A9TS00101 & Above
(TS32T) S/N A9UE00101 & Above (Bobcat Only)
(TS32M CONV) S/N A9TV00101 & Above
(TS32M) S/N A9UH00101 & Above (Bobcat Only)
(TS32C CONV) S/N A9V300101 & Above
(TS32C) S/N A9VG00101 & Above (Bobcat Only)
(TS36T CONV) S/N A9SA00101 & Above
(TS36T) S/N A9UL00101 & Above (Bobcat Only)
(TS36M CONV) S/N A9TZ00101 & Above
(TS36M) S/N A9UP00101 & Above (Bobcat Only)
(TS36C CONV) S/N A9V600101 & Above
(TS36C) S/N A9VJ00101 & Above (Bobcat Only)
(TS44M CONV) S/N A9SG00101 & Above
(TS44M) S/N A9UT00101 & Above (Bobcat Only)
(TS44C CONV) S/N A9V900101 & Above
(TS44C) S/N A9VL00101 & Above (Bobcat Only)



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REFERENCE INFORMATION

Write the correct information for YOUR Bobcat tree spade in the spaces below. Always use these numbers when referring to your Bobcat tree spade.

Tree Spade Serial Number _____

NOTES:

_____

_____

_____

_____

_____

YOUR BOBCAT DEALER:

_____

ADDRESS:

_____

PHONE:

_____

Bobcat Company
P.O. Box 128
Gwinner, ND 58040-0128
UNITED STATES OF AMERICA

Doosan Benelux SA
Drève Richelle 167
B-1410 Waterloo
BELGIUM

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FOREWORD

This Operation & Maintenance Manual was written to give the owner / operator instructions on the safe operation and maintenance of the Bobcat tree spade. READ AND UNDERSTAND THIS OPERATION & MAINTENANCE MANUAL BEFORE OPERATING YOUR TREE SPADE. If you have any questions, see your Bobcat dealer.

BOBCAT COMPANY IS IS0 9001 CERTIFIED 5

SERIAL NUMBER LOCATION 7
- Attachment Serial Number 7

DELIVERY REPORT 7

ATTACHMENT IDENTIFICATION 8
- 3 Blade 8
- 4 Blade 9

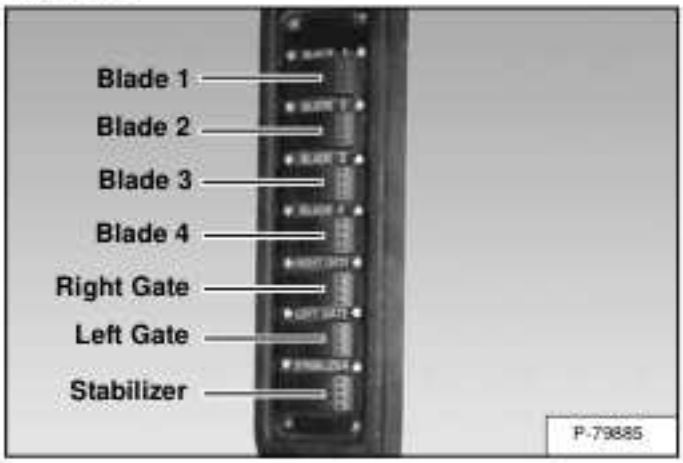
FEATURES AND ACCESSORIES 10
- Standard Items 10
- Options And Accessories 10

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Control Functions (Cont'd)

Pendant Control (Cont'd)

Figure 46



The four blade controller **[Figure 46]** has the following functions:

- BLADE 1 - This switch controls the up and down movement of blade 1.
- BLADE 2 - This switch controls the up and down movement of blade 2.
- BLADE 3 - This switch controls the up and down movement of blade 3.
- BLADE 4 - This switch controls the up and down movement of blade 4.
- RIGHT GATE - This switch controls the opening and closing of the right gate.
- LEFT GATE - This switch controls the opening and closing of the left gate.
- STABILIZER - This switch controls the up and down movement of the aftermarket rear stabilizers.

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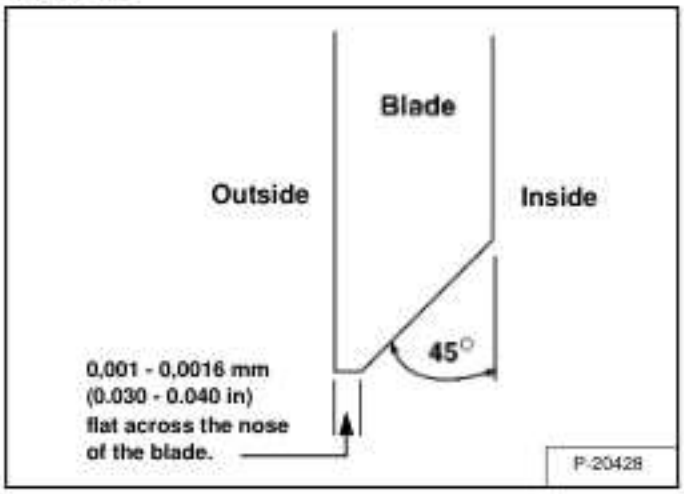
Blade Sharpening

The blades need to be kept sharp at all times to assure optimum digging performance. Frequency of sharpening will be dependent on soil conditions and types of trees to be dug. When the blade edges start to become rounded or when the operator notices that it takes more effort to extract a tree, sharpen the blades.

Sharpen the blades with the blade fully retracted, the gates fully open and with the loader engine off. Do not sharpen the blades with the loader running.

The tree spade blades need to be sharp enough to easily cut tree roots and penetrate hard soils (do not sharpen to a point). Concentrate sharpening of the blade to the bottom half of the blade and the blade point. Do not get the metal too hot while sharpening, some of the temper will be taken out of the blade.

Figure 74



Sharpen the blades lightly at a 45° angle **[Figure 74]**.

To sharpen the blade point, it may be necessary to slightly raise and block the tree spade up to better access the blade point.

⚠ WARNING

Eye and body protection is required when welding or grinding. Wear approved goggles, helmet and clothing. Failure to wear eye and body protection can result in serious injury.

W-2009-1285

Lubrication Locations

Always use a good quality lithium base multi-purpose grease when lubricating the tree spade. Apply lubricant until extra grease shows.

Lubricate the grease fittings, **EVERY 8 - 10 hours**.

Figure 75

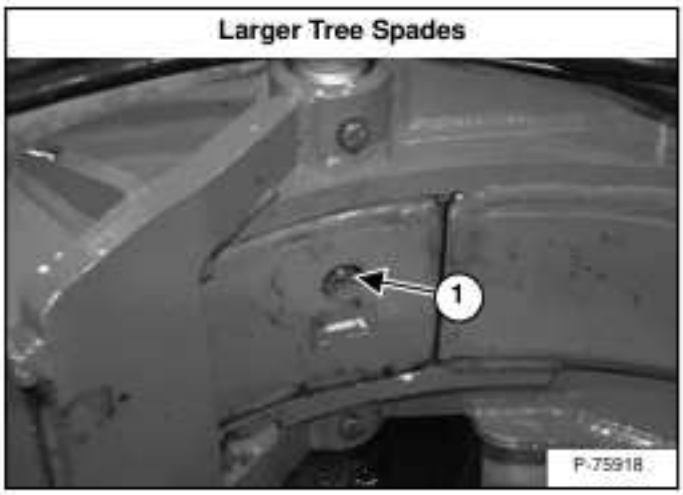
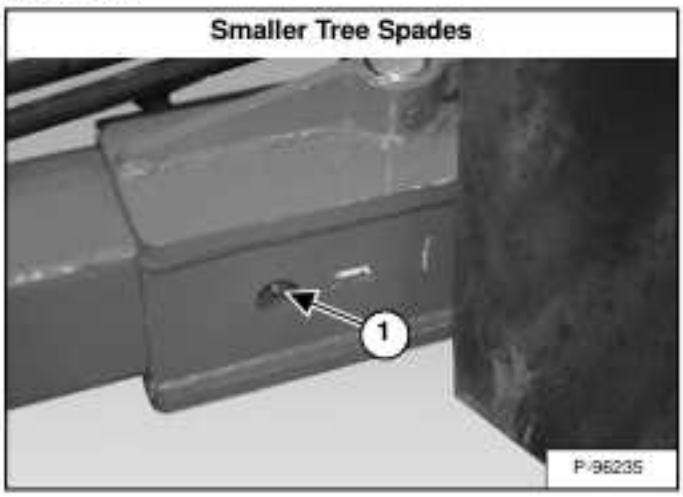


Figure 76



Close the gates fully.

Grease the pivot pin (Item 1) **[Figure 75]** and **[Figure 76]**.

IMPORTANT

Do not open or close the gate until the blades are in the full raised position. Damage to the machine could occur.

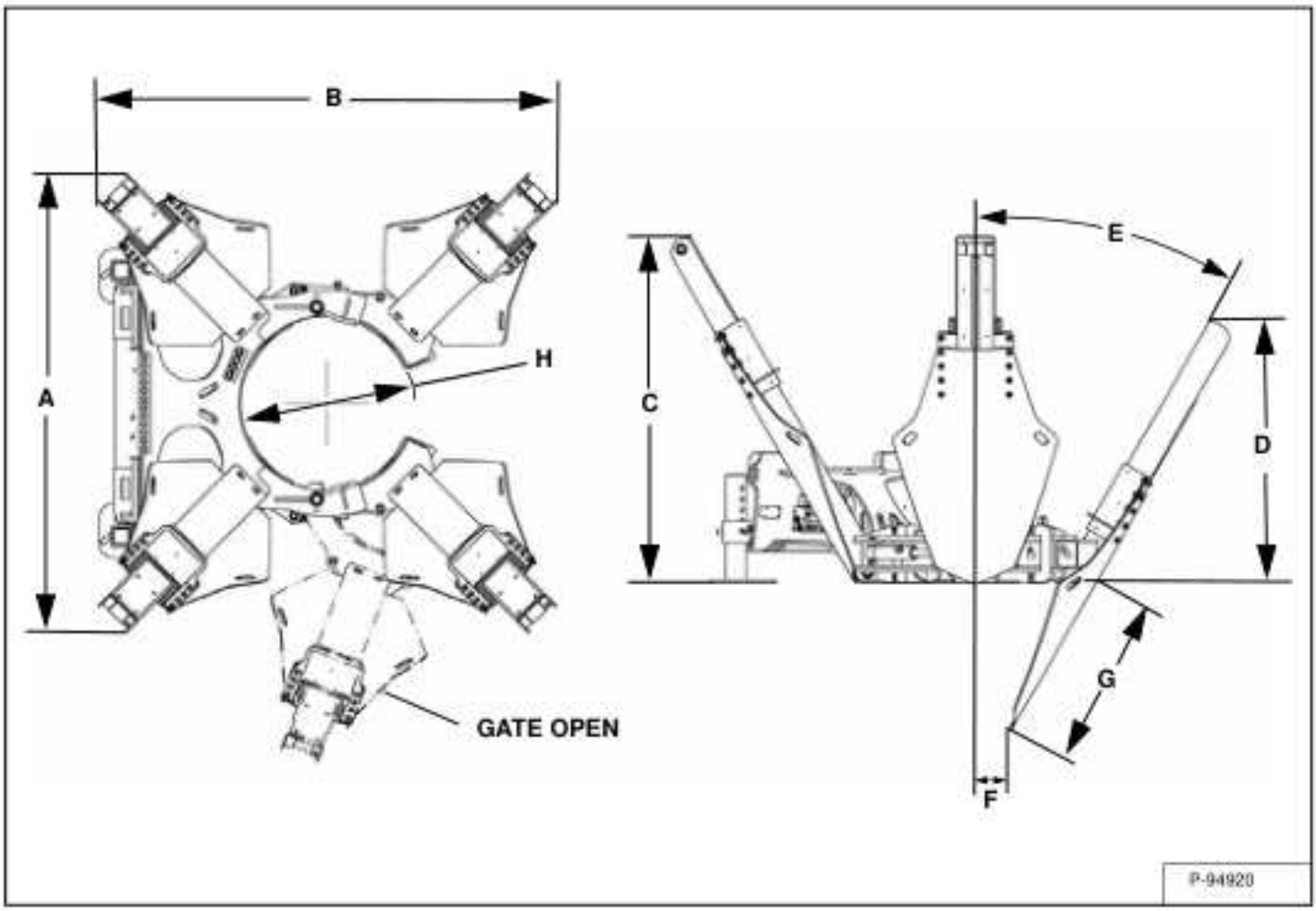
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(TS44) TREE SPADE SPECIFICATIONS

Dimensions

- All dimensions are shown in millimeters. Respective imperial dimensions are given in inches enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



TREE SPADE		
	TS44M	TS44C
Overall Width (A)	1974 mm (77.7 in)	2162 mm (85.1 in)
Overall Length (B)	1994 mm (78.5 in)	2162 mm (85.1 in)
Height, Blade Raised (C)	1692 mm (66.6 in)	1631 mm (64.2 in)
Height, Blade Lowered (D)	1283 mm (50.5 in)	1240 mm (48.8 in)
Tower Angle (E)	25°	30°
Bottom Opening Radius (F)	239 mm (9.4 in)	142 mm (5.6 in)
Blade Travel from Base (G)	787 mm (31.0 in)	846 mm (33.3 in)
Base Inside Diameter (H)	820 mm (32.3 in)	820 mm (32.3 in)

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SAFETY INSTRUCTIONS

Safe Operation Is The Operator's Responsibility

Safety Alert Symbol

This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

WARNING

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine.

I-2019-0284

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.

D-1002-1107

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.

W-2044-1107

The Bobcat machine and attachment must be in good operating condition before use.

Check all of the items on the Bobcat Service Schedule Decal under the 8 - 10 hour column or as shown in the Operation & Maintenance Manual.

Safe Operation Needs A Qualified Operator

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the attachment.

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, Safety Manual and machine signs (decals).
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.

Have Training with Actual Operation

- Operator training must consist of a demonstration and verbal instruction. This training is given by your Bobcat dealer before the product is delivered.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine and attachment safely under all conditions of the work area. Always fasten seat belt before operating.

Know the Work Conditions

- Know the weight of the materials being handled. Avoid exceeding the machine load capacities. Material which is very dense will be heavier than the same volume of less dense material. Reduce the size of load if handling dense material.
- The operator must know any prohibited uses or work areas, for example, he or she needs to know about excessive slopes.
- Know the location of any underground lines. Call local utilities or the TOLL FREE phone number found in the *Call Before You Dig* Section of this manual.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, respiratory equipment, hearing protection, Special Applications Kits or a Front Window Guard are required for some work. See your Bobcat dealer about Bobcat Safety equipment for your machine.

SI ATT-0509

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