BRADCO

OPERATOR'S AND PARTS MANUAL

HP400/HP450/HP600/HP750/HP1000 COLD PLANERS FOR SKID-STEER LOADERS

BRADCO
FFC
HARLEY
THE MAJOR
McMILLEN
SWEEPSTER
PALADIN LIGHT CONSTRUCTION

SERIAL NUMBER: _____

MODEL NUMBER: _____

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TABLE OF CONTENTS

TO THE OWNER ..... A

SAFETY PRECAUTIONS ..... B

- To The Operator
- Before You Start
- Working With The Attachment
- Transporting The Attachment
- Maintenance

INTERNATIONAL SYMBOLS C

PREOPERATION ..... D

- Preparing the Vehicle
- Skid-Steer
- Before Operation
- Nomenclature

ASSEMBLIES ..... E

- Planer Assemblies
- Drum and Pick Options
- Wheel Assembly
- Hydraulic Assembly
- Hose Kit #38168 - 16" & 18" Planers (HP400 / HP450)
- Hose Kit #38169 - 24" Planer (HP600)
- Hose Kit #38170 - 30" Planer (HP750)
- Hose Kit #38308 - 40" Planer (HP1000)
- Water Kit #19216
- Water Kit #103031
- Cylinder Assembly #101540
- Cylinder Assembly #89520
- Cylinder Assembly #89535

INSTALLATION INSTRUCTIONS ..... F

OPERATING INSTRUCTIONS ..... G

- General Operating Instructions
- Special Applications
  - Large Area
  - Milling Around Manholes
  - Deep Cuts
  - Milling Taper Cuts

LUBRICATION ..... H

MAINTENANCE AND SERVICE L

- Routine Maintenance
- Pick Replacement
- Changing The Drum
- Changing The Planetary
- Changing The Hydraulic Motor

TROUBLESHOOTING ..... N

BOLT TORQUE SPECIFICATIONS ..... O

SPECIFICATIONS ..... P

DECALS ..... Q

LIMITED WARRANTY ..... S

TO THE OWNER

GENERAL COMMENTS

Congratulations on the purchase of your new BRADCO product! This product was carefully designed and manufactured to give you years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all safety precautions and maintenance procedures, as described in this manual.

ABOUT THIS MANUAL

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents. **Remember, never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual. (See Sections B and G respectively.)**

Unless noted otherwise, right and left sides are determined from the position of the operator when behind the product facing forward.

SAFETY ALERT SYMBOL

This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

SERVICE

When servicing your product, remember to use only manufacturer replacement parts. Substitute parts may not meet the standards required for safe, dependable operation.

To facilitate parts ordering, record the model and serial number of your unit in the space provided on this page. This information may be obtained from the identification plate located on the product.

MODEL_____
SERIAL NUMBER_____
DATE PURCHASED_____

The parts department needs this information to insure that you receive the correct parts for your specific model.

SAFETY PRECAUTIONS

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

THIS SYMBOL MEANS:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

SIGNAL WORDS: Note the use of signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, **typically for machine components which, for functional purposes, cannot be guarded.**

WARNING: Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury, and **includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.**

CAUTION: 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.**

SAFETY PRECAUTIONS

GENERAL INFORMATION

This section is composed of various warnings and safety tips. **Read and learn all the information in this section before you attempt to use your attachment.** Also read your vehicle owner's manual before using your equipment. This knowledge will help you operate your unit safely. **Do not take this information lightly, it is presented for your benefit and for the benefit of others working around you.**

The "Safety Alert Symbol" (as described in Section A and at the beginning of Section B) will be used throughout this manual. It will appear with the word **DANGER**, **WARNING**, or **CAUTION**, and a safety message pertaining to the specific topic being covered. Take the time to read these messages as you come across them.

TO THE OPERATOR

The primary responsibility for safety with the equipment falls to the operator. Make sure that the equipment is operated only by responsible individuals with the proper instruction. It is the skill, care, common sense, and good judgement of the operator that will determine how efficiently and safely the job is performed. Know your equipment before you start. Know its capabilities and how to operate all the controls. Visually inspect your equipment before you start and never operate equipment that is not in proper working order.

BEFORE YOU START

1. **Read the entire loader and attachment operator's manuals** before ever attempting to use the loader. This knowledge is necessary for safe operation.
2. **Follow all safety decals.** Keep them clean and replace them if they become worn, damaged or illegible.
2. **Do not paint over,** remove or deface any safety signs or warning decals on your equipment.
4. **Know your equipment inside and out.** Know how to operate all controls and know emergency shut down procedures.
5. **Keep all stepping surfaces, pedals, and controls free from dirt, grease and oil.** Keep equipment clean to help avoid injury from a fall when getting on or off equipment.
6. **Use handholds and step plates when getting on/off .** Failure to do so could cause a fall.
7. **Be alert to others in the work area.** Be sure others know when and where you will be working. Make sure no one is behind equipment.
8. **Never take passengers on your equipment.** There is no safe place for a passenger.

9. **Never try to board equipment while it is moving.**

10. **Turn off engine before performing maintenance.** All maintenance can be performed with the machine lowered. If lift arms must be left raised for any reason, use a positive lift arm lock to secure the arms in place. Serious damage or personal injury could result from lift arms accidentally lowering.

11. **Reduce speed when driving over rough terrain,** on a slope, or turning to avoid overturning the loader.

12. **Test all controls before you begin.**

13. **Do not smoke when refueling.** Allow room in the gas tank for expansion. Wipe up any spilt fuel. Secure cap tightly when done.

WORKING WITH THE ATTACHMENT

1. **Never operate the unit without first reading and understanding the operator's manual.**

2. **Operate the attachment only in daylight or sufficient artificial light.**

3. **Do not carry load with arms in the raised position.** Always carry loads close to the ground. Do not step off platform with load raised.

4. **Check your work area and know where all utility lines are.** Avoid hitting underground electrical wires, cables, pipes, fence posts, gas lines, etc.

5. **Never operate equipment while under the influence** of alcohol, or prescription drugs which could inhibit physical and/or mental capacity.

6. **Do not exceed rated operating capacity, as machine may become unstable which may result in loss of control.**

7. **Slow down before turning.** Sharp turns on any terrain may cause loss of control.

8. **Always lower the loader arms to the ground,** shut off the engine and remove the key before getting off the unit.

TRANSPORTING THE ATTACHMENT

1. **Follow all federal, state and local regulations when transporting the unit on public roads.**

2. **Use extra care when loading or unloading the machine onto a trailer or truck.**

MAINTENANCE

1. **Never work on equipment while it is running.**

2. **Never make hydraulic repairs while the system is under pressure**. Injury or death could result.

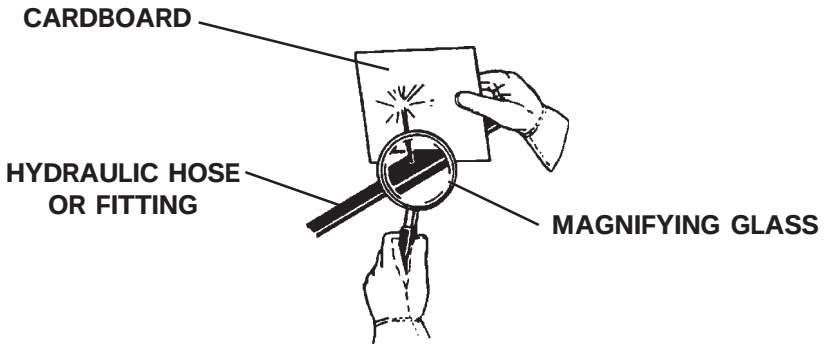
SAFETY PRECAUTIONS

3. **Observe proper maintenance schedules** and repairs to keep the unit in safe working order.
4 **Always wear safety goggles or glasses when working on equipment.**
5. **Use a drift and hammer when pressing out pins** to prevent the pin from shattering.
6. **Use only manufacturer recommended replacement parts.** Other parts may be substandard in fit and quality.

WARNING! **Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather that hands to search for suspected leaks.**

Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.

If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.



INTERNATIONAL SYMBOLS

As a guide to the operation of your equipment, various international symbols have been utilized on the instruments and controls. The symbols are shown below with an indication of their meaning.


Engine speed


Hours recorded


Engine water temperature


Lights


Horn


Engine oil pressure


Hazard warning


Axle connect


Axle disconnect


Continuously variable


Increase

Decrease

Diesel fuel


Creeper range


High range


Low range


Alternator charge


Power take-off (on)


Power take-off (off)


"Tortoise," slow or minimum setting


"Hare," fast or maximum setting


Caution


Control lever operating direction


Rock shaft (raised)


Rock shaft (lowered)


Remote cylinder (extended)


Remote cylinder (retracted)


Remote cylinder (FLOAT)


Differential lock


Read operators manual

Neutral


Forward


Reverse

PRE-OPERATION

HIGH FLOW COLD PLANERS

GENERAL INFORMATION

The purpose of this manual is to assist in setting up, operating and maintaining your BRADCO planer. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

Unless otherwise noted right and left are determined from the position of the skid-steer operator sitting in the operator's seat facing forward.

Remember to read the "Safety Precautions" and "Operating Instructions" sections of the manual BEFORE you attempt to install or use the planer.

NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the cold planers as may be necessary without notification.

PREPARING THE VEHICLE

WARNING! Never let anyone operate this attachment without understanding all of the "Safety Precautions" and "Operating Instructions" sections of this manual. (See Section B and G respectively.) Always choose hard, level ground to park the attachment on and set the brake so the vehicle cannot roll.

SKID-STEER

The BRADCO 16", 18", 24", 30" and 40" planers are designed for use on high flow skid-steers. Cold planer and skid-steer compatibility is determined by the recommended lifting capacity and hydraulic output of your skid-steer.

WARNING! Do NOT attach or operate any attachment that exceeds the recommended lifting capacity of your skid-steer.

Skid-steers MUST be equipped with optional high flow, auxiliary boom hydraulics, case drain and a multi-function electric control kit to run the cold planer.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure that the equipment is operated only by trained individuals that have read and understand this manual. Don't hurry the learning process or take the unit for granted. Practice the operation of your new equipment and become familiar with the controls and the way it handles on your machine.

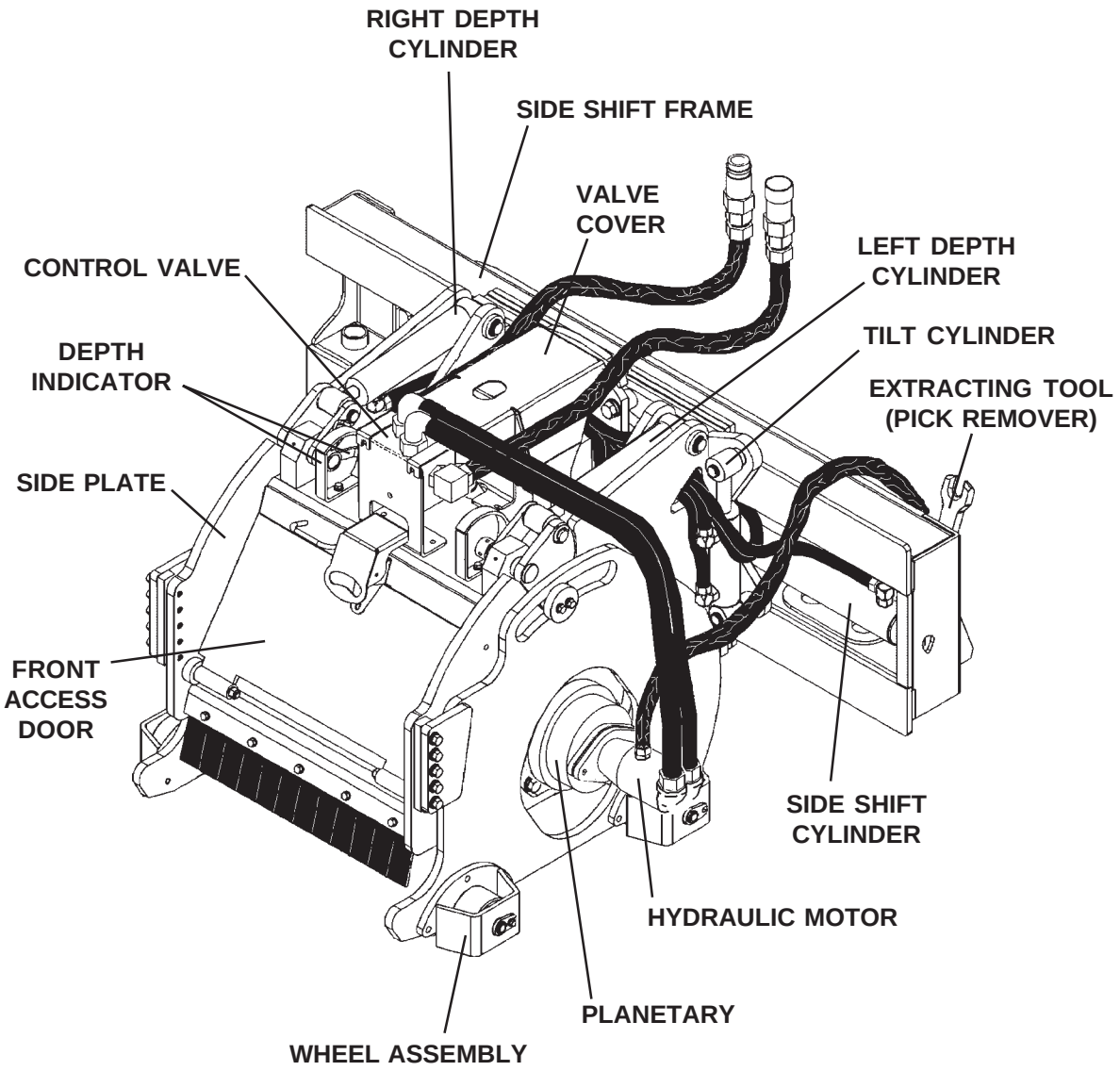
If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer.

PLANING OPTIONS	**Concrete Picks**	**Contact Dealer**
	2.5" (Slot Cutter) Drum	**#100642**
	4.0" (Slot Cutter) Drum	**#100643**
	6.0" (Slot Cutter) Drum	**#100644**
MOTOR OPTIONS	**22 GPM to 28 GPM (2.0 CU.IN. BLUE)**	**#17776**
	29 GPM to 35 GPM (2.5 CU.IN. BLACK)	**#17777**
	36 GPM to 44 GPM (3.0 CU. IN. RED)	**#17778**

NOTE: 36 GPM to 44 GPM motor is required on the 40" Cold Planers.

MAJOR NOMENCLATURE

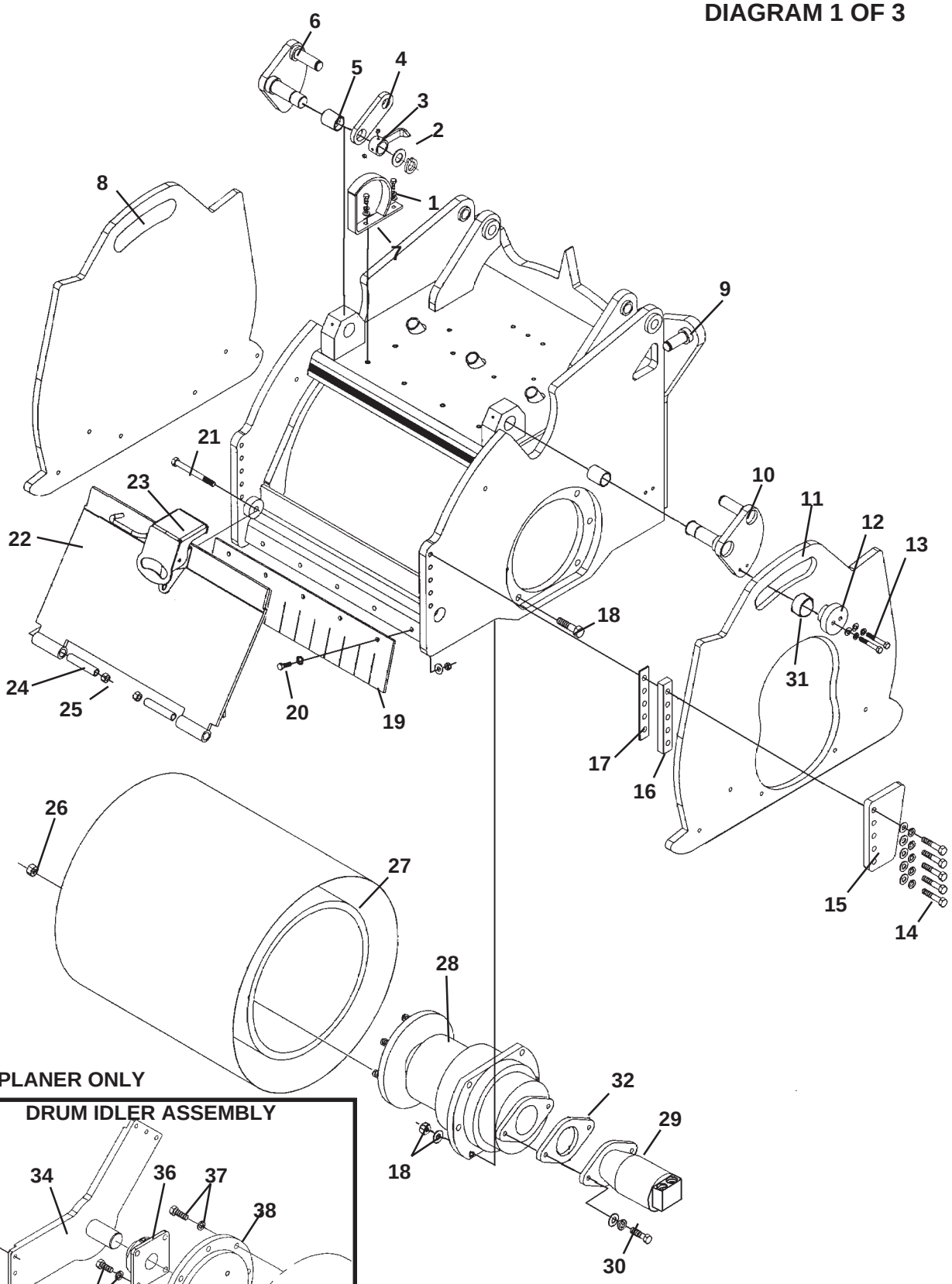
Throughout this manual, reference is made to various attachment components. The purpose of this section is to acquaint you with the various names of these components. This knowledge will be helpful when reading through the manual or when ordering service parts.



PLANER ASSEMBLY

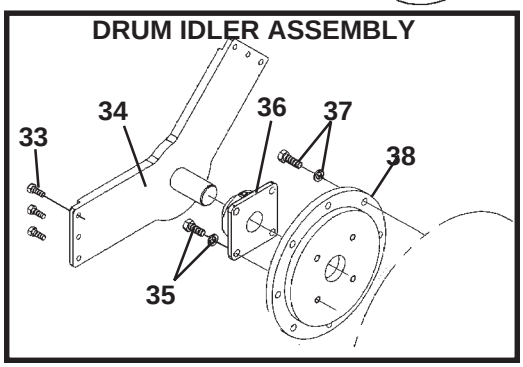
16", 18", 24", 30" & 40" COLD PLANER ASSEMBLIES

DIAGRAM 1 OF 3



40" PLANER ONLY

DRUM IDLER ASSEMBLY



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PLANER ASSEMBLY

16", 18", 24", 30" & 40" COLD PLANER ASSEMBLIES

LIST 1 OF 3

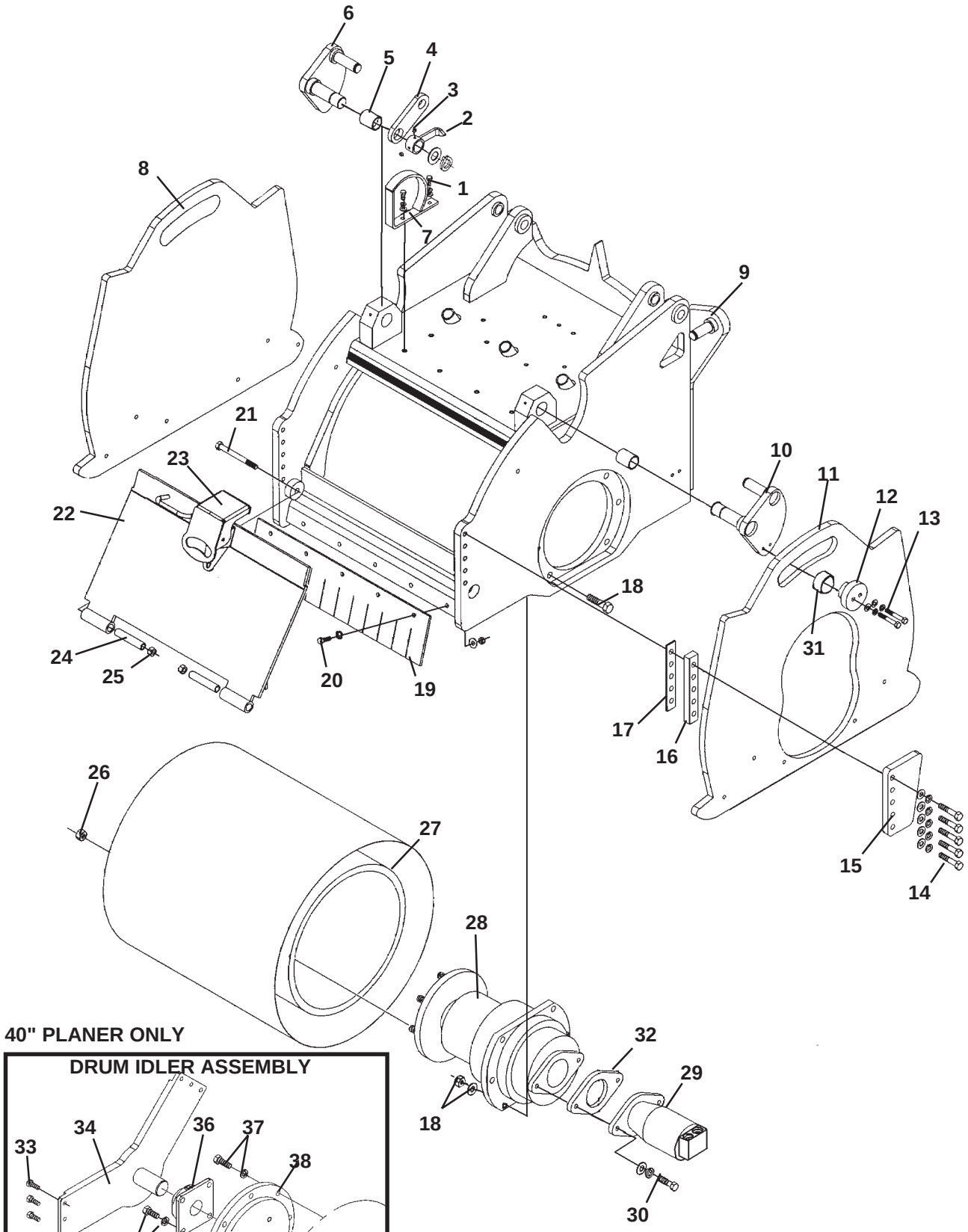
NO	REQ'D	PART NO.	DESCRIPTION
1	4	1022	.31" UNC X 1.00" Hex Capscrew
	4	1502	.31" Lock Washer
	4	1513	.31" Flat Washer
2	2	17737	Depth Indicator
3	4	1589	Set Screw
4	2	17729	Pivot Plate
5	2	18685	Bushing
6	1	17677	Right Link
	1	1652	1.25" Snap Ring
	1	64727	1.25" Thrust Washer
7	2	17734	Bracket
8	1	17725	Right Side Plate
9	1	18651	Cannister (16" & 18" Planer)
	1	17600	Cannister (24" Planer)
	1	19431	Cannister (30" Planer)
	1	101085	Cannister (40" Planer)
	2	6616	Grease Fitting
10	1	17676	Left Link
	1	1652	1.25" Snap Ring
	1	64727	1.25" Thrust Washer
11	1	17722	Left Side Plate
12	2	17728	Retainer
13	4	1092	.50" UNC X 2.00" Hex Capscrew
	4	1505	.50" Lock Washer
14	20	1965	.50" UNC X 2.50" Hex Capscrew Grade 8
	20	1505	.50" Lock Washer
	20	1646	.50" Hard Flat Washer
15	4	17727	Clamp Plate
16	4	17731	Spacer
17	8	18681	Shim
18	6	1821	.62" UNC X 2.50" Hex Capscrew - Grade 8
	6	1627	.62" Hard Flat Washer
	6	1839	.62" UNC Deformed Lock Nut
19	1	19886	Rubber Deflector (16" & 18" Planer)
	1	19887	Rubber Deflector (24" Planer)
	1	19888	Rubber Deflector (30" Planer)
	1	101125	Rubber Deflector (40" Planer)

NOTE: There may be a slight quantity difference in hardware between the various cold planers. Quantity listed is for the 24" planer.

PLANER ASSEMBLY

16", 18", 24", 30" & 40" COLD PLANER ASSEMBLIES

DIAGRAM 2 OF 3



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PLANER ASSEMBLY

16", 18", 24", 30" & 40" COLD PLANER ASSEMBLIES

NO	REQ'D	PART NO.	DESCRIPTION
20	5	1044	.38" UNC X 1.25" Hex Capscrew
	5	1503	.38" Lock Washer
	5	1514	.38" Flat Washer
	5	1226	.38" UNC Hex Nut
21	2	1102	.50" UNC X 5.00" Hex Capscrew
22	1	18656	Door (16" & 18" Planer)
	1	17663	Door (24" Planer)
	1	19545	Door (30" Planer)
	1	101130	Door (40" Planer)
23	1	19560	Latch
	2	1043	.38" UNC X 1.00" Hex Capscrew
	2	1503	.38" Lock Washer
	2	1514	.38" Flat Washer
	2	1226	.38" UNC Hex Nut
24	2	17666	Spacer Tube
25	2	1841	.50" UNC Deformed Lock Nut
26	8	10003	.62" UNF Deformed Oval Lock Nut
27	1	18534	Drum Assembly with Teeth (16" Planer)
	1	18535	Drum Assembly with Teeth (18" Planer)
	1	18524	Drum Assembly with Teeth (24" Planer)
	1	19712	Drum Assembly with Teeth (30" Planer)
	1	101080	Drum Assembly with Teeth (40" Planer)
28	1	18970	Planetary
	--	30355	Replacement Oil Fill Plug
29	--	17776	Hydraulic Motor (Not available on 40" Planer) 2.0 Cu. In. / Blue / 22 GPM - 28 GPM
	--	17777	Hydraulic Motor Option (Not available on 40" Planer) 2.5 Cu. In. / Black / 29 GPM - 35 GPM
	--	17778	Hydraulic Motor Option (Standard on 40" Planer) 3.0 Cu. In. / Red / 36 GPM - 44 GPM
	**	45845	Replacement Seal Kit
30	2	1090	.50" UNC X 1.50" Hex Capscrew
	2	1646	.50" Hard Flat Washer
	2	1505	.50" Lock Washer
31	2	101467	Spacer Tube
32	1	102594	Motor Gasket

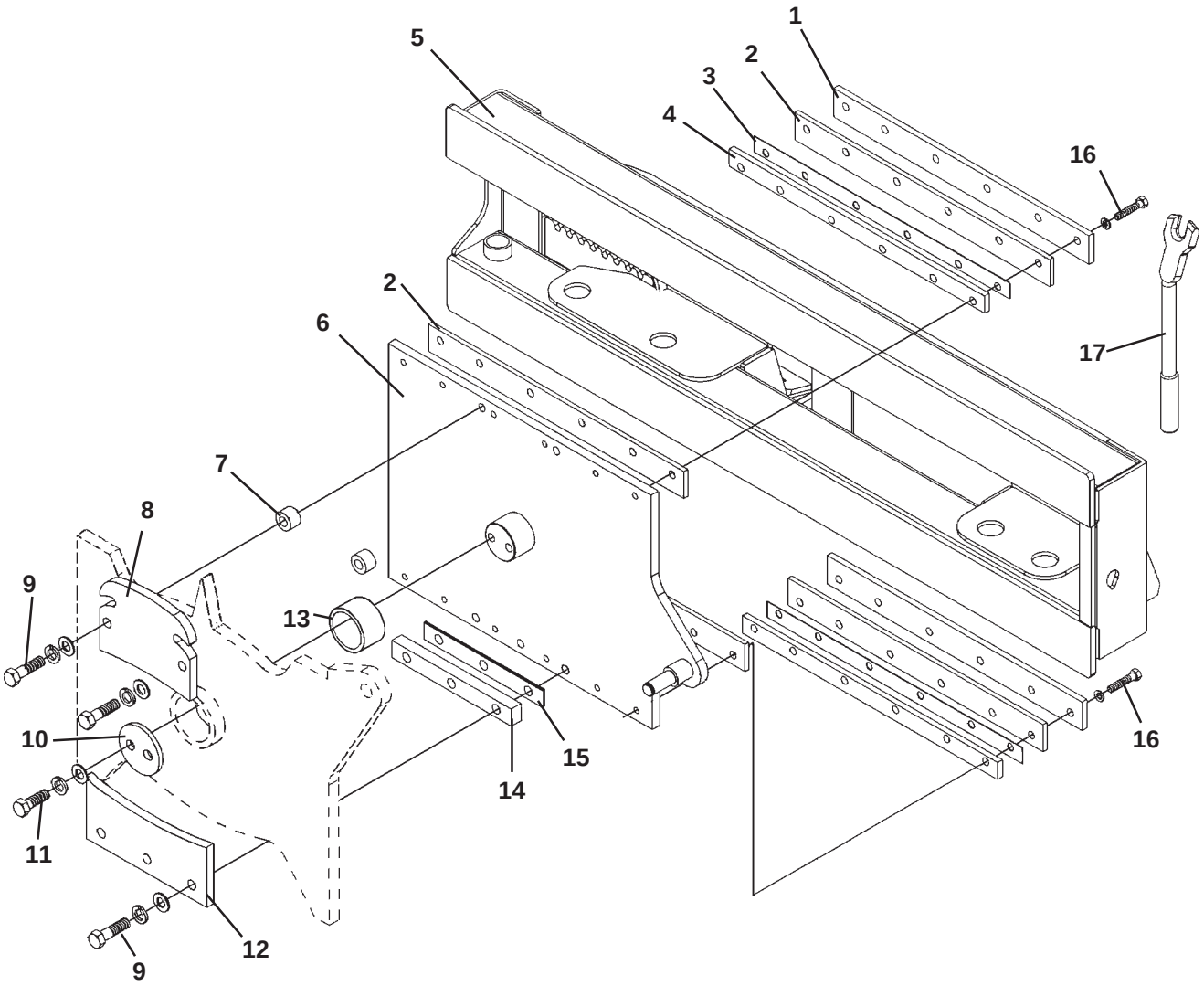
**** Field replacement of internal motor seals voids warranty.**

NOTE: There may be a slight quantity difference in hardware between the various cold planers. Quantity listed is for the 24" planer.

PLANER ASSEMBLY

16", 18", 24", 30" & 40" COLD PLANER ASSEMBLIES

DIAGRAM 3 OF 3



PLANER ASSEMBLY

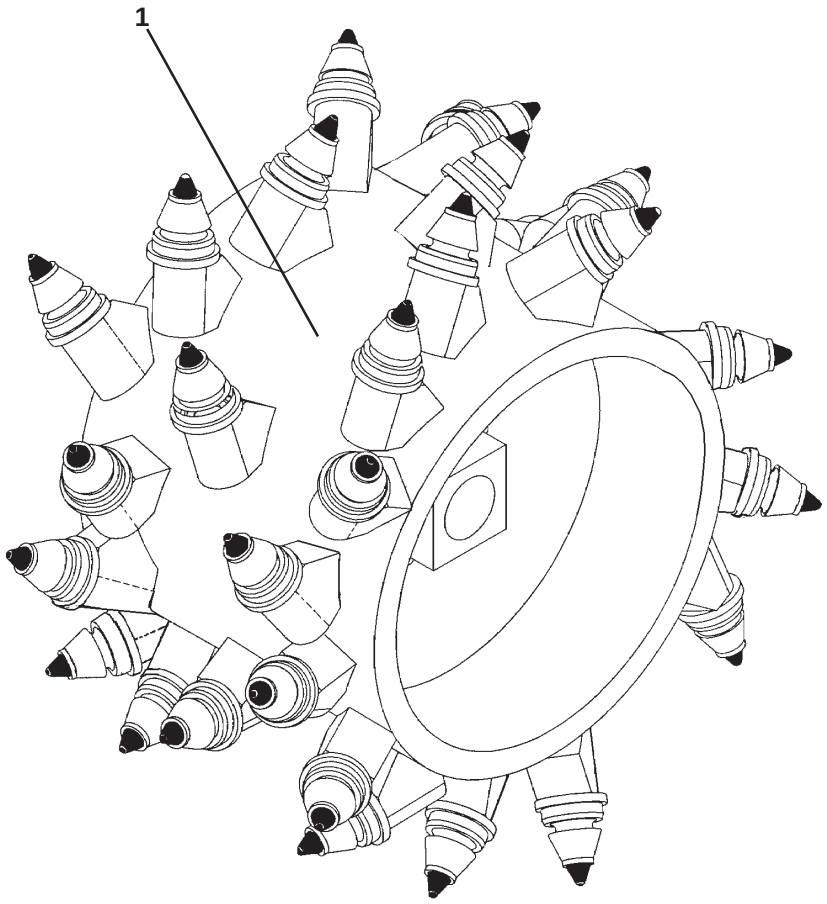
16", 18", 24", 30" & 40" COLD PLANER ASSEMBLIES

LIST 3 OF 3

NO	REQ'D	PART NO.	DESCRIPTION
1	2	19196	Clamp Plate (16" & 18" Planer)
	2	17757	Clamp Plate (24" Planer)
	2	19548	Clamp Plate (30" Planer)
	2	101118	Clamp Plate (40" Planer)
2	4	19198	Wear Strip (16" & 18" Planer)
	4	89611	Wear Strip (24" Planer)
	4	19550	Wear Strip (30" Planer)
	4	101120	Wear Strip (40" Planer)
3	2	19199	Shim (16" & 18" Planer)
	2	89612	Shim (24" Planer)
	2	19551	Shim (30" Planer)
	2	101121	Shim (40" Planer)
4	2	19197	Spacer Plate (16" & 18" Planer)
	2	17758	Spacer Plate (24" Planer)
	2	19549	Spacer Plate (30" Planer)
	2	101119	Spacer Plate (40" Planer)
5	1	89501	Side Shift Frame
6	1	18648	Pivot Plate (16" & 18" Planer)
	1	17661	Pivot Plate (24" Planer)
	1	19543	Pivot Plate (30" Planer)
	1	101116	Pivot Plate (40" Planer)
7	2	17732	Spacer Tube
8	1	17730	Plate
9	5	1142	.75" UNC X 2.75" Hex Capscrew
	5	1507	.75" Lock Washer
	5	1649	.75" Hard Flat Washer
10	1	88996	Cap Plate
11	2	1139	.75" UNC X 2.00" Hex Capscrew
	2	1507	.75" Lock Washer
	2	1649	.75" Hard Flat Washer
12	1	88995	Guide Plate
13	1	89436	Bushing
14	1	17733	Spacer
15	1	18893	Shim
16	12	1818	.50" UNC X 2.75" Hex Capscrew Grade 8
	12	1505	.50" Lock Washer
17	1	100213	Extracting Tool (Pick Puller)

NOTE: There may be a slight quantity difference in hardware between the various cold planers. Quantity listed is for the 24" planer.

DRUM AND PICK OPTIONS



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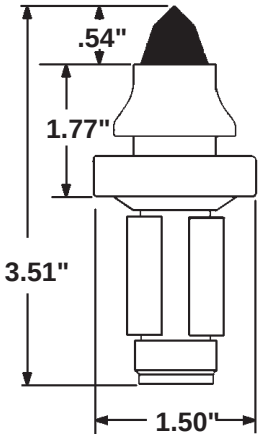

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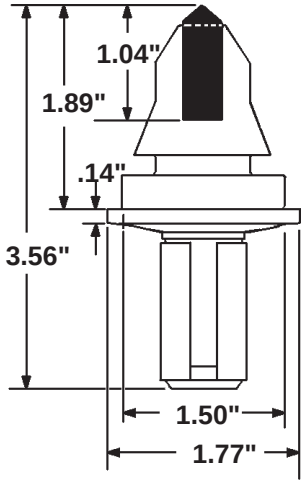


DRUM AND PICK OPTIONS

DRUM OPTIONS (INCLUDES STANDARD ALL-PURPOSE PICKS)

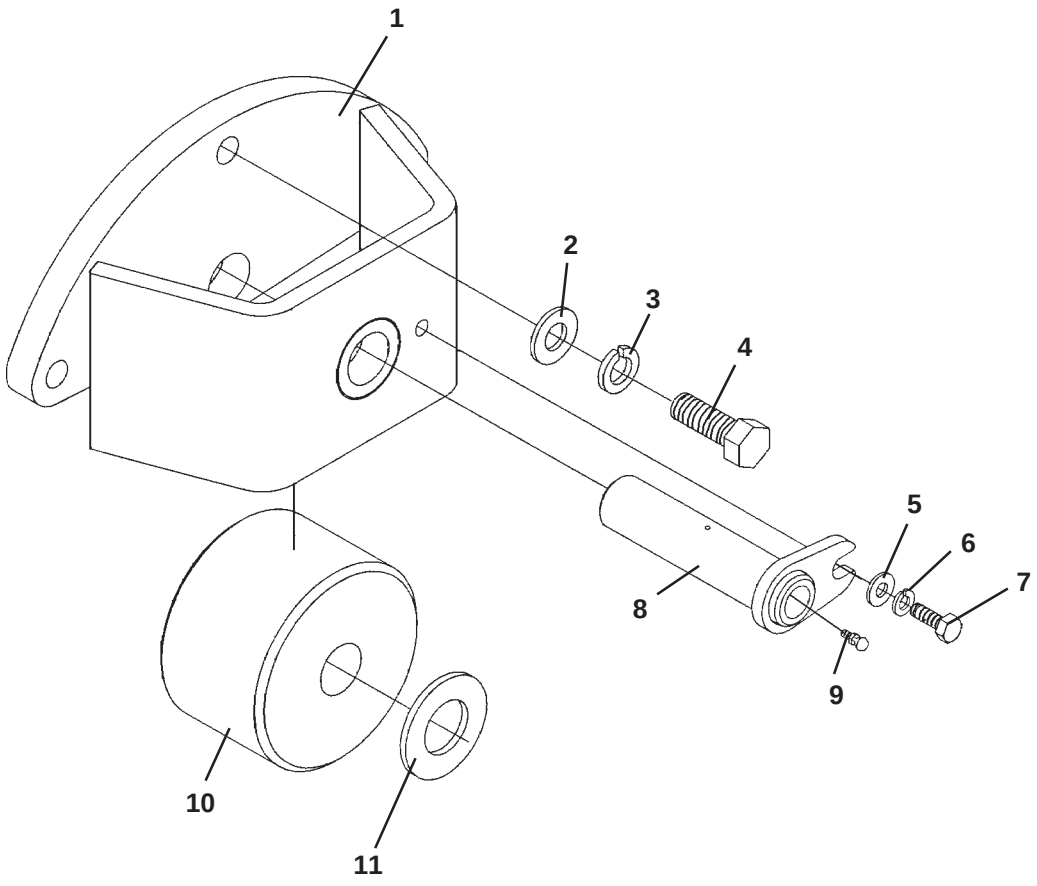
#1 DESCRIPTION	PART NUMBER	PICK QTY
16" Standard Drum (16" Cold Planer)	18534	43
18" Standard Drum (18" Cold Planer)	18535	45
24" Standard Drum (24" Cold Planer)	18524	57
30" Standard Drum (30" Cold Planer)	19712	69
40" Standard Drum (40" Cold Planer)	101080	89
2.50" Slot Cutter Drum (All Planers)	100642	18
4.00" Slot Cutter Drum (All Planers)	100643	18
6.00" Slot Cutter Drum (All Planers)	100644	20

#2 DESCRIPTION	PART NUMBER
General Purpose Application Pick	18546

#3 DESCRIPTION	PART NUMBER
Concrete Application Pick with Washer	18547

WHEEL ASSEMBLY

ASSEMBLY #18702



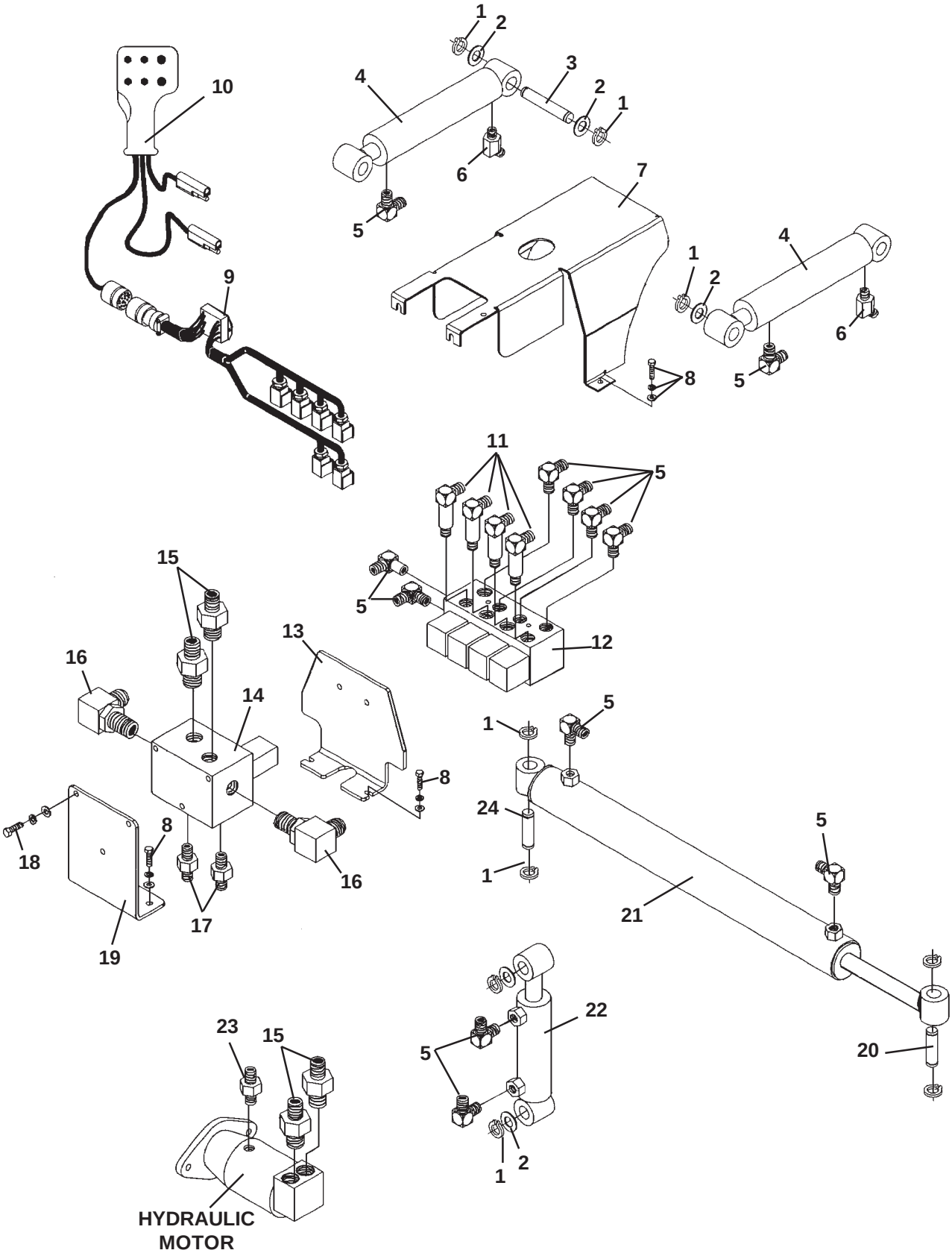
WHEEL ASSEMBLY

ASSEMBLY #18702

NO	REQ'D	PART NO.	DESCRIPTION
1	1	17667	Wheel Mounting Bracket
2	3	1646	.50" Hard Flat Washer
3	3	1505	.50" Lock Washer
4	3	1811	.50" UNC X 1.50" Hex Capscrew - Grade 8
5	1	1514	.38" Flat Washer
6	1	1503	.38" Lock Washer
7	1	1042	.38 "UNC X .75" Hex Capscrew
8	1	17673	Pivot Pin
9	1	6616	Grease Fitting
10	1	17671	Wheel
11	1	61079	Washer

HYDRAULIC ASSEMBLY

ASSEMBLY #19220



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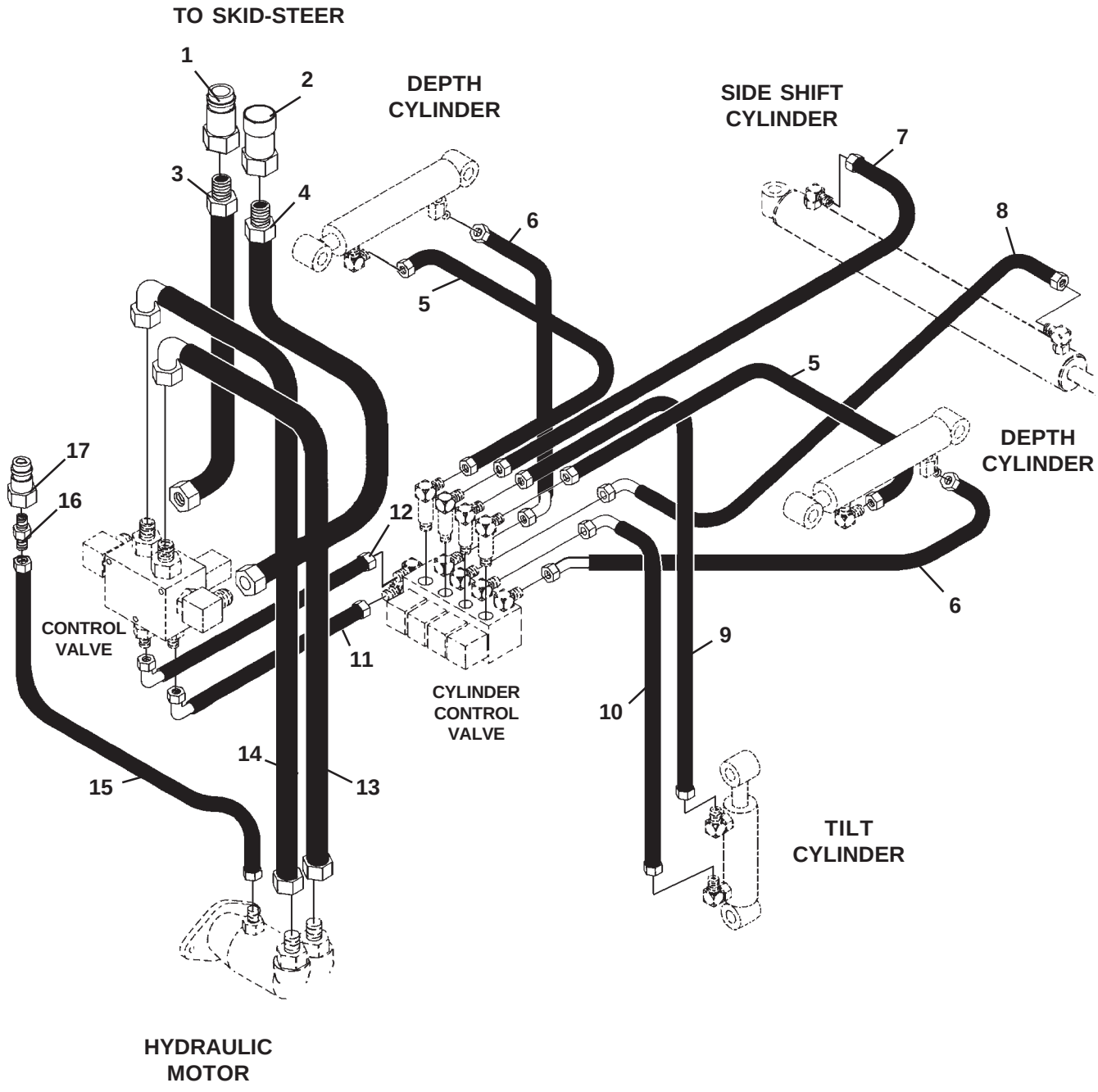
HYDRAULIC ASSEMBLY

ASSEMBLY #19220

NO	REQ'D	PART NO.	DESCRIPTION
1	12	6612	Snap Ring 1.00"
2	8	61079	Thrust Washer 1.00" x .06"
3	2	73461	Cylinder Pin
4	2	89520	Cylinder Assembly (Depth Control)
5	12	3434	90° Elbow 6MBo-6MJ
6	2	30313	45° Elbow 6MBo-6MJ
7	1	19195	Valve Cover
8	6	1022	.31" UNC X 1.00" Hex Capscrew
	6	1502	.31" Lock Washer
	6	1513	.31" Flat Washer
9	1	19215	Wire Harness - Four Function Control
	2	1836	10-24 UNC Hex Nut
	2	1634	10-24 X .50" Round Headed Capscrew
10	1	100434	Electrical Control Handle
11	4	30140	90° Elbow - XL 6MBo-6MJ
12	1	89618	Cylinder Control Valve
	2	1033	.31" UNC X 3.75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
13	1	19970	Bracket
14	1	100780	Control Valve
15	4	3409	Straight Connector 16MBo-12MJ
16	2	30051	90° Elbow 16MBo-12MJ
17	2	3457	Straight Connector 6MBo-6MJ
18	3	1043	.38" UNC X 1.00" Hex Capscrew
	3	1503	.38" Lock Washer
	3	1800	.38" Hard Flat Washer
19	1	19194	Valve Mounting Bracket
20	1	89978	Cylinder Pin
21	1	89535	Cylinder Assembly (Side Shift)
22	1	101540	Cylinder Assembly (Tilt)
23	1	3269	Straight Connector 8MBo-6MJ
24	1	102537	Cylinder Pin

HP400 & HP450 PLANER HOSE KIT

16" & 18" PLANER HOSE SET #38168



9366
9-22-04

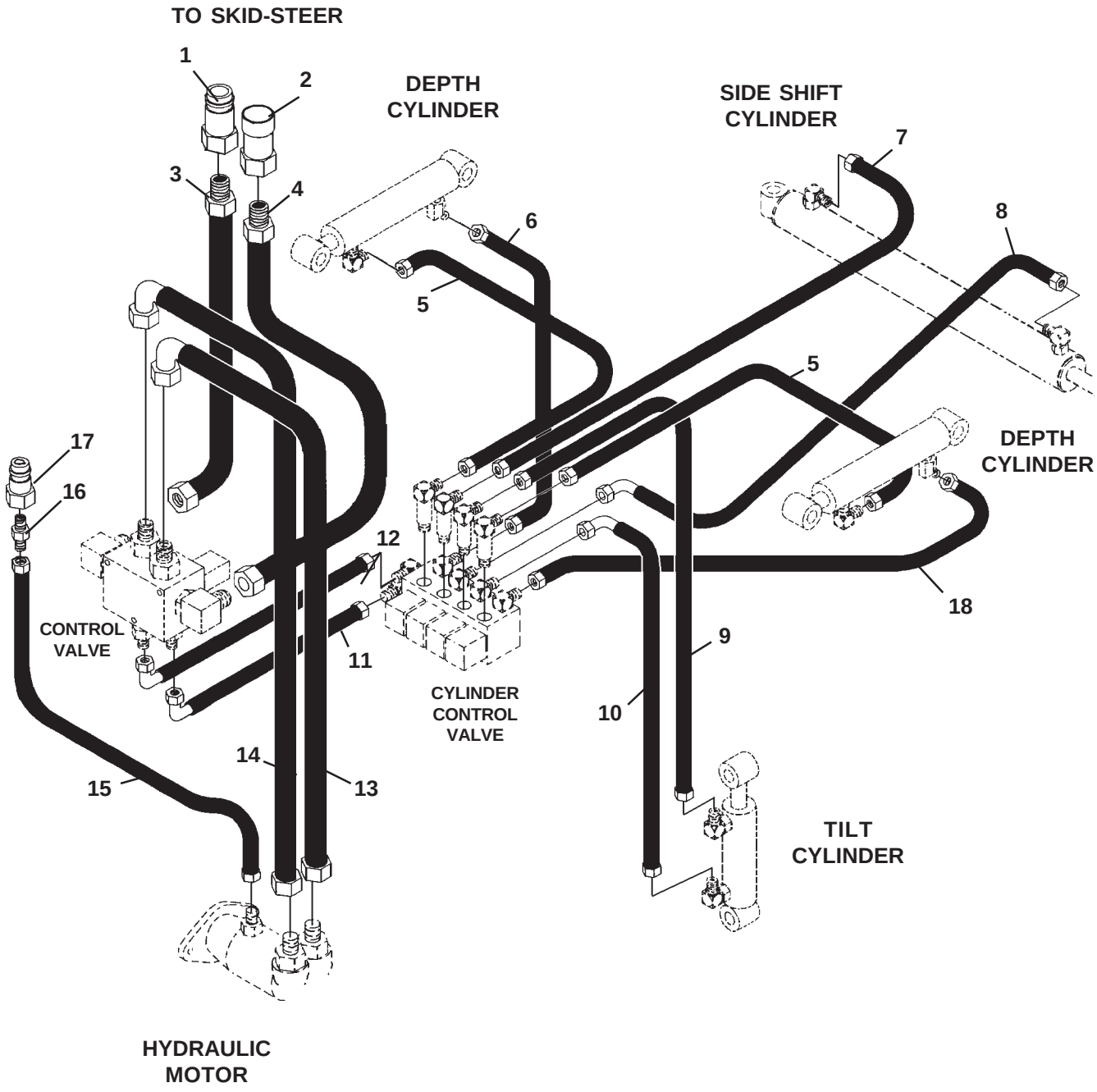
HP400 & HP450 PLANER HOSE KIT

16" & 18" PLANER HOSE SET #38168

NO	REQ'D	PART NO.	DESCRIPTION
1	1	19638	Male Coupler
2	1	22520	Female Coupler
3	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
4	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
5	2	37016	Hose .25" X 15" 6FJX-6FJX
6	2	38175	Hose .25" X 17" 6FJX-6FJX 45°
7	1	37599	Hose .25" X 66" 6FJX-6FJX
8	1	38108	Hose .25" X 54" 6FJX-6FJX 90°
9	1	37236	Hose .25" X 22" 6FJX-6FJX
10	1	38106	Hose .25" X 22" 6FJX-6FJX 90°
11	1	38157	Hose .25" X 13" 6FJX-6FJX 90°
12	1	38021	Hose .25" X 16" 6FJX-6FJX 90°
13	1	38174	Hose .75" X 38" 12FJX-12FJX 90° -HS
14	1	38109	Hose .75" X 39" 12FJX-12FJX 90° -HS
15	1	37275	Hose .25" X 94" 6FJX-6FJX
16	1	3269	Straight Connector 8MBo-6MJ
17	1	84923	Male Coupler

HP600 PLANER HOSE KIT

24" PLANER HOSE SET #38169



9368
9-22-04

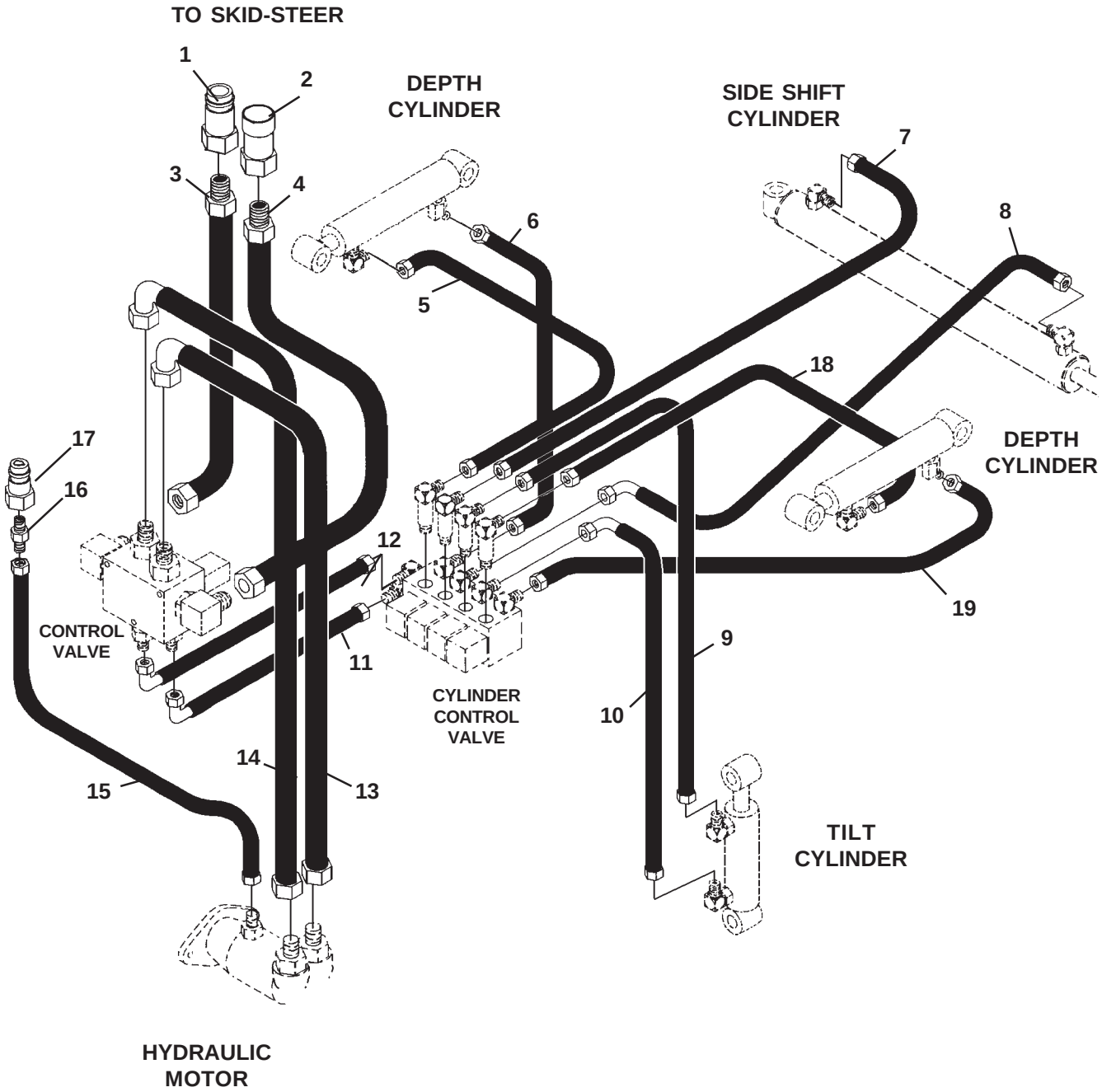
HP600 PLANER HOSE KIT

24" PLANER HOSE SET #38169

NO	REQ'D	PART NO.	DESCRIPTION
1	1	19638	Male Coupler
2	1	22520	Female Coupler
3	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
4	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
5	2	37016	Hose .25" X 15" 6FJX-6FJX
6	1	37236	Hose .25" X 22" 6FJX-6FJX
7	1	37599	Hose .25" X 66" 6FJX-6FJX
8	1	38108	Hose .25" X 54" 6FJX-6FJX 90°
9	1	37421	Hose .25" X 25" 6FJX-6FJX
10	1	37804	Hose .25" X 25" 6FJX-6FJX 90°
11	1	38157	Hose .25" X 13" 6FJX-6FJX 90°
12	1	38021	Hose .25" X 16" 6FJX-6FJX 90°
13	1	38174	Hose .75" X 38" 12FJX-12FJX 90° -HS
14	1	38109	Hose .75" X 39" 12FJX-12FJX 90° -HS
15	1	37275	Hose .25" X 94" 6FJX-6FJX
16	1	3269	Straight Connector 8MBo-6MJ
17	1	84923	Male Coupler
18	1	37017	Hose .25" X 21" 6FJX-6FJX

HP750 PLANER HOSE KIT

30" PLANER HOSE SET #38170



9370
9-22-04

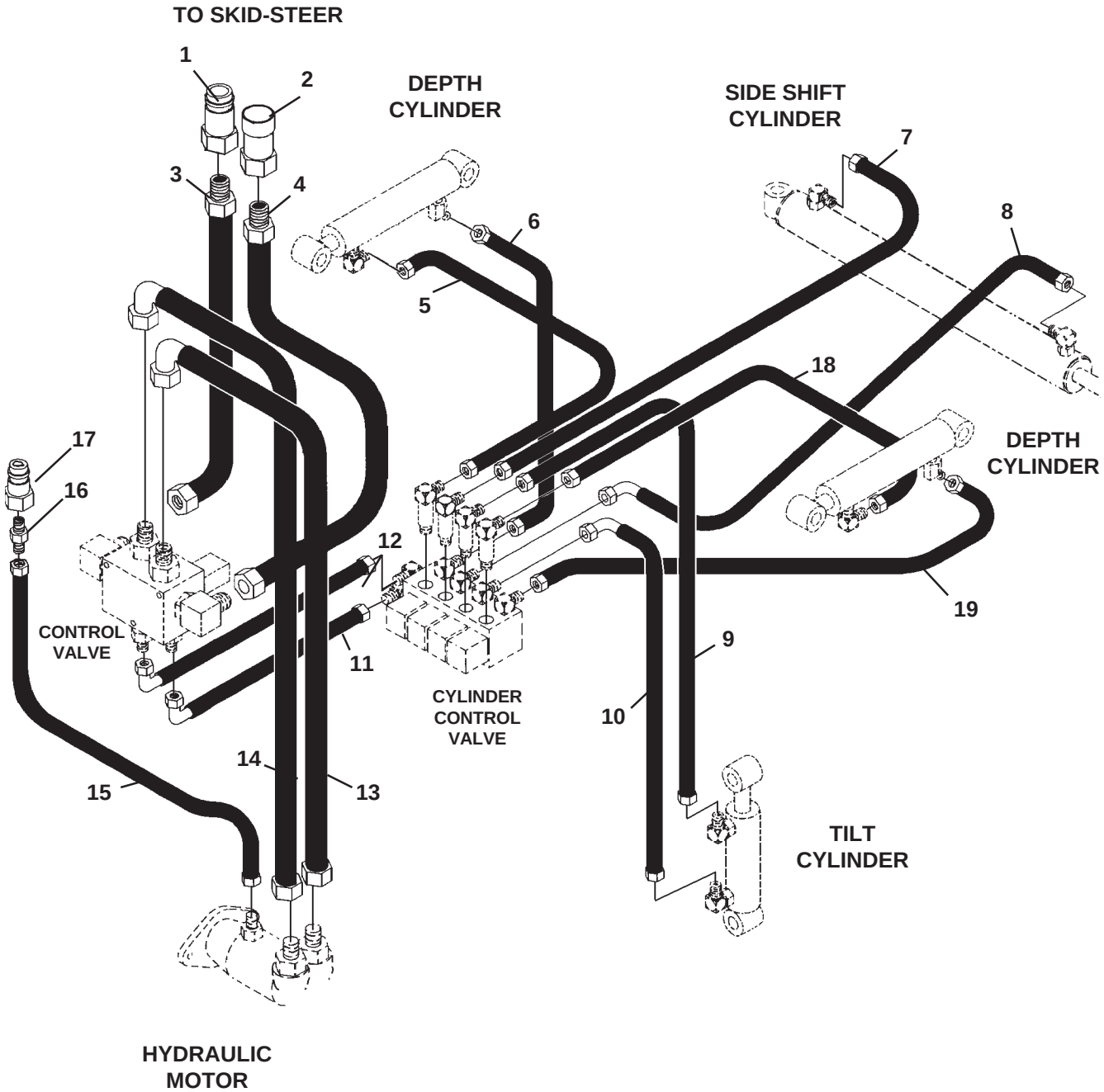
HP750 PLANER HOSE KIT

30" PLANER HOSE SET #38170

NO	REQ'D	PART NO.	DESCRIPTION
1	1	19638	Male Coupler
2	1	22520	Female Coupler
3	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
4	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
5	1	37282	Hose .25" X 24" 6FJX-6FJX
6	1	38154	Hose .25" X 17" 6FJX-6FJX
7	1	37599	Hose .25" X 66" 6FJX-6FJX
8	1	38108	Hose .25" X 54" 6FJX-6FJX 90°
9	1	35694	Hose .25" X 34" 6FJX-6FJX
10	1	37805	Hose .25" X 34" 6FJX-6FJX 90°
11	1	38157	Hose .25" X 13" 6FJX-6FJX 90°
12	1	38021	Hose .25" X 16" 6FJX-6FJX 90°
13	1	38158	Hose .75" X 41" 12FJX-12FJX 90° -HS
14	1	37658	Hose .75" X 42" 12FJX-12FJX 90° -HS
15	1	37275	Hose .25" X 94" 6FJX-6FJX
16	1	3269	Straight Connector 8MBo-6MJ
17	1	84923	Male Coupler
18	1	37236	Hose .25" X 22" 6FJX-6FJX
19	1	38153	Hose .25" X 16" 6FJX-6FJX

HP1000 PLANER HOSE KIT

40" PLANER HOSE SET #38308



10428
11-3-05

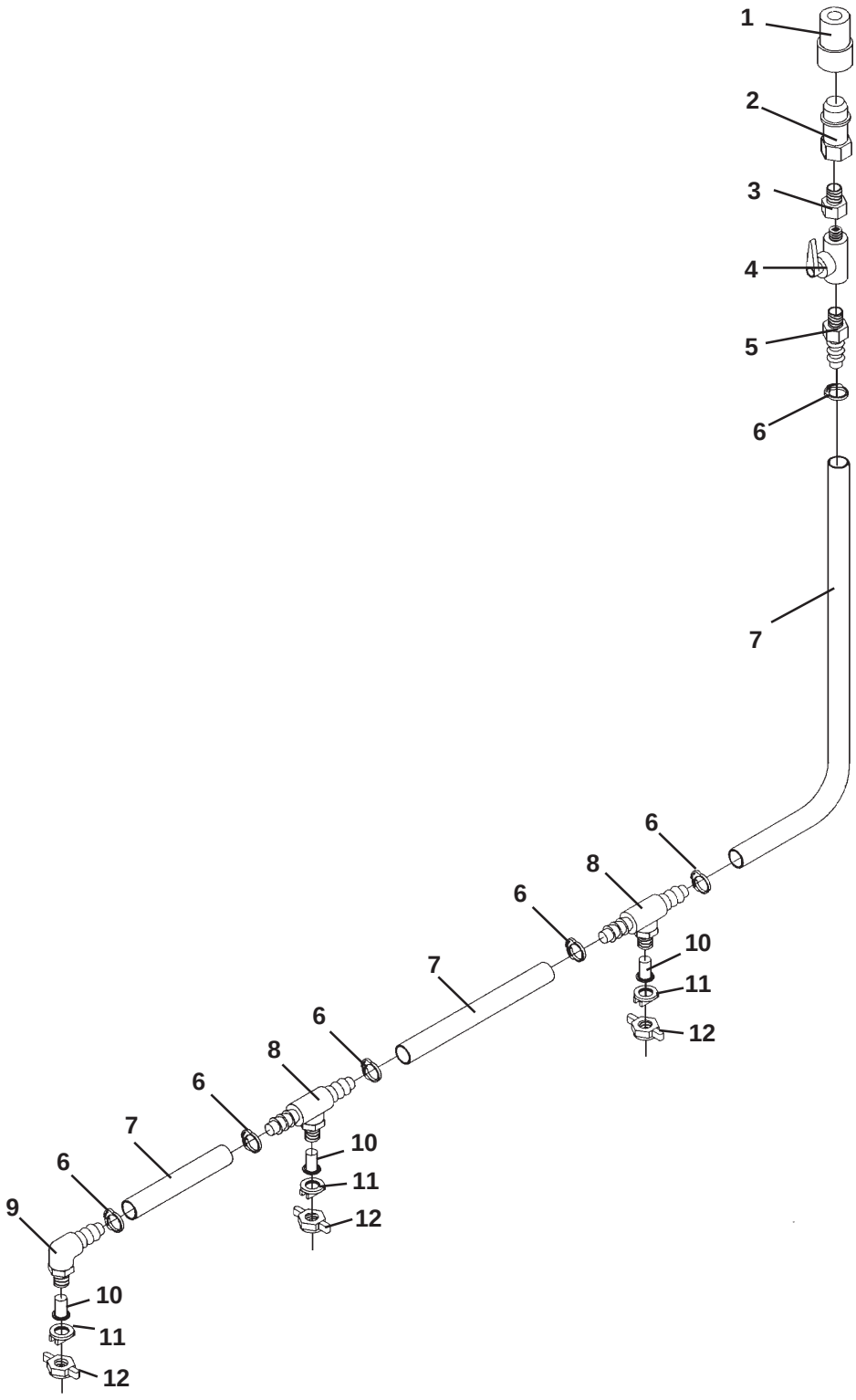
HP1000 PLANER HOSE KIT

40" PLANER HOSE SET #38308

NO	REQ'D	PART NO.	DESCRIPTION
1	1	19638	Male Coupler
2	1	22520	Female Coupler
3	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
4	1	38159	Hose .75" X 75" 12FJX-12MBo-HS
5	1	35694	Hose .25" X 34" 6FJX-6FJX
6	1	38219	Hose .25" X 27" 6FJX-6FJX
7	1	37599	Hose .25" X 66" 6FJX-6FJX
8	1	38108	Hose .25" X 54" 6FJX-6FJX 90°
9	1	35694	Hose .25" X 34" 6FJX-6FJX
10	1	37805	Hose .25" X 34" 6FJX-6FJX 90°
11	1	38157	Hose .25" X 13" 6FJX-6FJX 90°
12	1	38021	Hose .25" X 16" 6FJX-6FJX 90°
13	1	38158	Hose .75" X 41" 12FJX-12FJX 90° -HS
14	1	37658	Hose .75" X 42" 12FJX-12FJX 90° -HS
15	1	37275	Hose .25" X 94" 6FJX-6FJX
16	1	3269	Straight Connector 8MBo-6MJ
17	1	84923	Male Coupler
18	1	37236	Hose .25" X 22" 6FJX-6FJX
19	1	38153	Hose .25" X 16" 6FJX-6FJX

WATER KIT

ASSEMBLY #19216



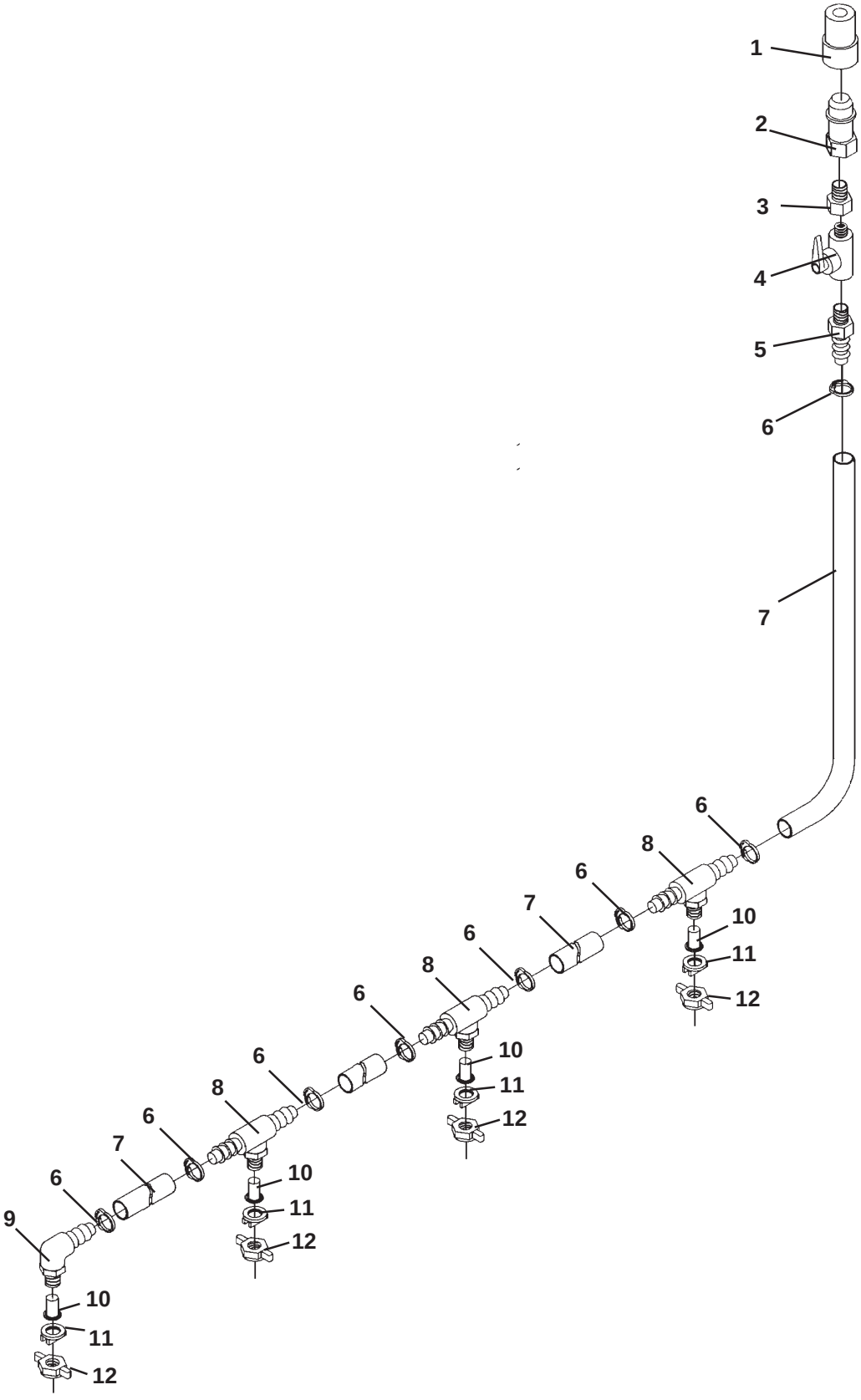
WATER KIT

ASSEMBLY #19216

NO	REQ'D	PART NO.	DESCRIPTION
1	1	30215	Female Quick Coupler
2	1	30214	Male Quick Coupler
3	1	30338	Bushing
4	1	30231	Ball Valve
5	1	30216	Hose Barb
6	6	30227	Hose Clamp
7	14'	19217	Reinforced PVC Hose (Cut to Length)
8	2	30223	Tee Nozzlebody
9	1	30222	90° Nozzlebody
10	3	30221	Inline Nozzlebody Strainer
11	3	30229	Spray Nozzle Tip
12	3	30225	Nozzlebody Wing Cap

WATER KIT

ASSEMBLY #103031



10430
11-3-05

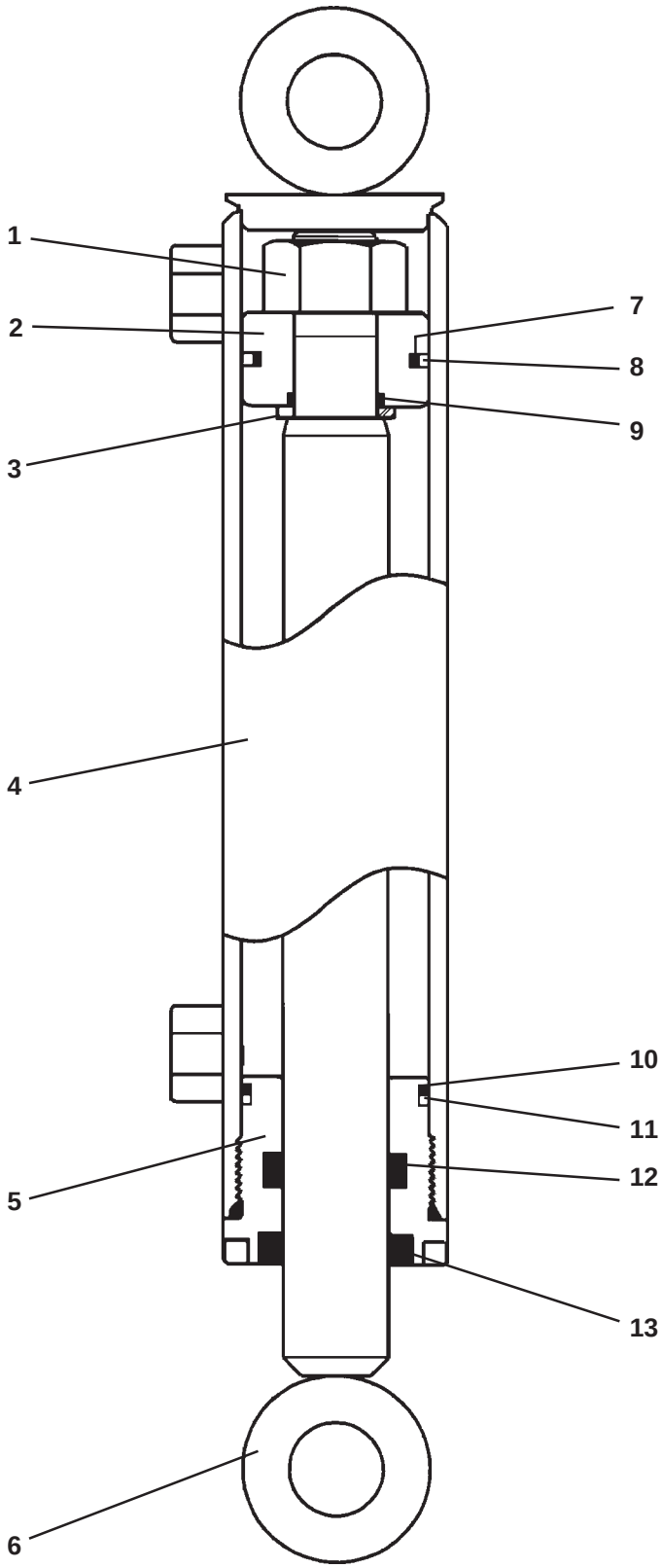
WATER KIT

ASSEMBLY #103031

NO	REQ'D	PART NO.	DESCRIPTION
1	1	30215	Female Quick Coupler
2	1	30214	Male Quick Coupler
3	1	30338	Bushing
4	1	30231	Ball Valve
5	1	30216	Hose Barb
6	8	30227	Hose Clamp
7	15'	36296	Reinforced PVC Hose (Cut to Length)
8	3	30223	Tee Nozzlebody
9	1	30222	90° Nozzlebody
10	4	30221	Inline Nozzlebody Strainer
11	4	30229	Spray Nozzle Tip
12	4	30225	Nozzlebody Wing Cap

CYLINDER ASSEMBLY

ASSEMBLY #101540



9829
9-22-04

CYLINDER ASSEMBLY

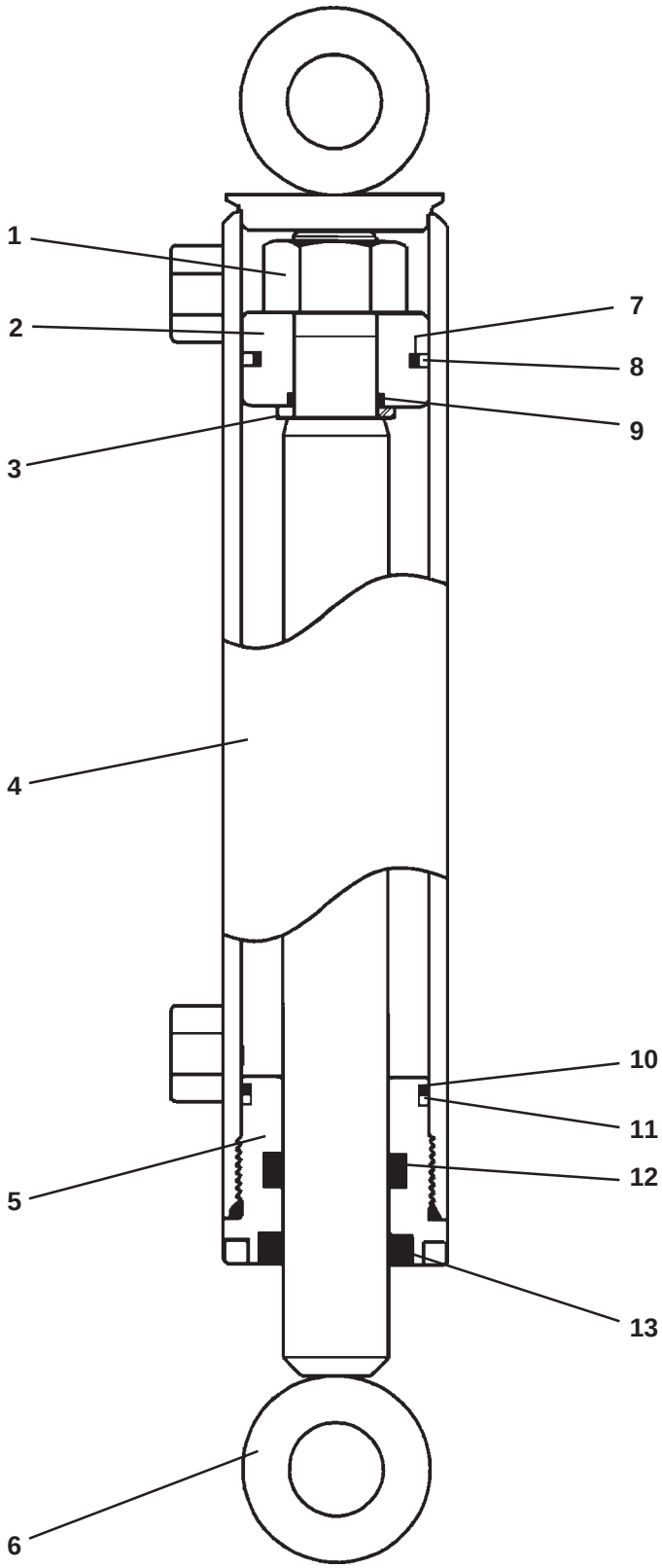
ASSEMBLY #101540

NO	REQ'D	PART NO.	DESCRIPTION
1	1	1482	Hex Nut
2	1	6992	Piston
3	1	52644	Washer
4	1	101539	Cylinder Tube
5	1	89527	Cylinder Gland
6	1	101537	Cylinder Rod
7	1	4637*	O-Ring
8	1	4636*	Piston Ring
9	1	4635*	O-Ring
10	1	4633*	O-Ring
11	1	4634*	Back-Up Washer
12	1	45262*	Poly-Pak Seal
13	1	4981*	Rod Wiper

NOTE: Seal kit #45581 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER ASSEMBLY

ASSEMBLY #89520



9362
3-3-04

CYLINDER ASSEMBLY

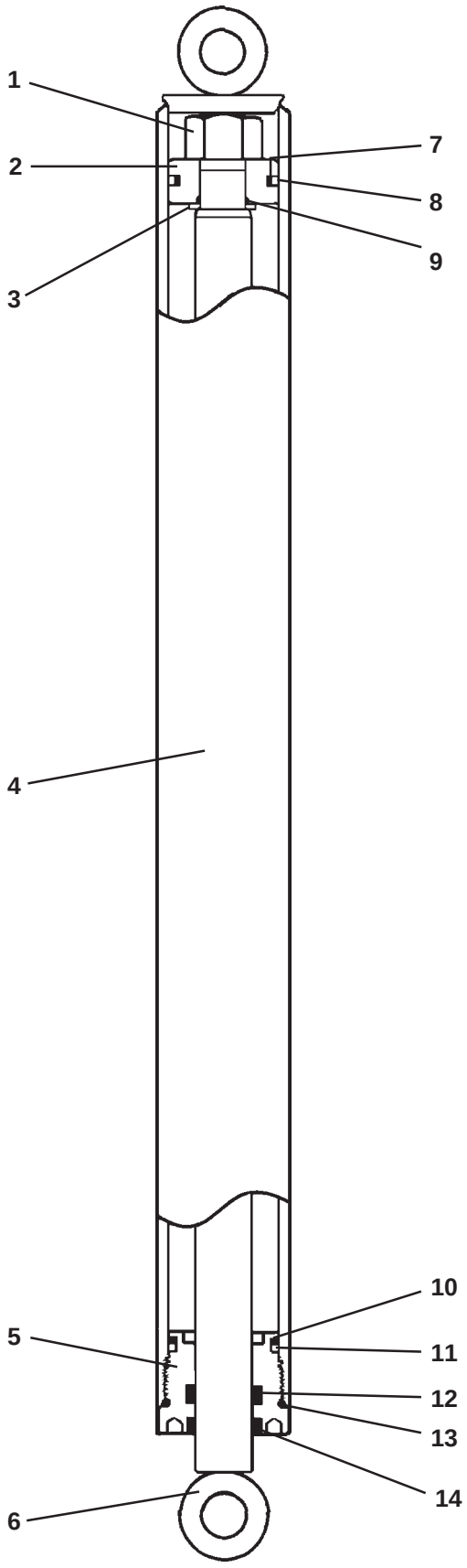
ASSEMBLY #89520

NO	REQ'D	PART NO.	DESCRIPTION
1	1	1482	Hex Nut
2	1	6992	Piston
3	1	52644	Washer
4	1	89521	Cylinder Tube
5	1	89527	Cylinder Gland
6	1	89522	Cylinder Rod
7	1	4637*	O-Ring
8	1	4636*	Piston Ring
9	1	4635*	O-Ring
10	1	4633*	O-Ring
11	1	4634*	Back-Up Washer
12	1	45262*	Poly-Pak Seal
13	1	4981*	Rod Wiper

NOTE: Seal kit #45581 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER ASSEMBLY

ASSEMBLY #89535



9364
3-3-04

CYLINDER ASSEMBLY

ASSEMBLY #89535

NO	REQ'D	PART NO.	DESCRIPTION
1	1	1483	Hex Nut
2	1	50252	Piston
3	1	5421	Washer
4	1	89536	Cylinder Tube
5	1	77458	Cylinder Gland
6	1	89537	Cylinder Rod
7	1	4645*	O-Ring
8	1	4644*	Piston Ring
9	1	4641*	O-Ring
10	1	4509*	O-Ring
11	1	4510*	Back-Up Washer
12	1	45219*	Poly-Pak Seal
13	1	45250*	O-Ring
14	1	45389*	Rod Wiper

NOTE: Seal kit #45617 includes all parts marked with an asterisk (*). Parts are not sold separately.

INSTALLATION INSTRUCTIONS

GENERAL INFORMATION

The following instructions will help you to mount your planer onto your skid-steer loader. The planer uses the quick-attach system for ease of installation. Therefore, if you know how to attach your loader bucket, attaching the cold planer should prove no problem.

Remember to read all safety warnings, decals and operating instructions before operating the attachment. If there is any portion of this manual that you do not understand, contact your dealer.

WARNING! THE 16", 18", 24", 30" AND 40" PLANERS ARE DESIGNED FOR USE ON HIGH FLOW HYDRAULIC SYSTEMS.
DO NOT ATTACH OR OPERATE ANY ATTACHMENT THAT EXCEEDS THE RECOMMENDED LIFTING CAPACITY OF YOUR SKID-STEER.

INSTALLATION INSTRUCTIONS

1. Remove the shipping banding from around the planer and skid.
2. Remove any attachments from the front of the loader.
3. Following all standard safety practices and the instructions for installing an attachment in your skid-steer operator's manual, install the planer onto your skid-steer.

NOTE: It is important to make sure the locking mechanism on your quick attach is engaged, therefore locking the attachment onto the skid-steer.

4. Lower the unit to the ground and remove the key.
5. Relieve any pressure from the auxiliary hydraulic system and after making sure that there is not any foreign matter on the hydraulic couplers, connect the power and return couplers to the high flow auxiliary hydraulic system of your skid-steer loader.
6. Connect the case drain coupler to the case drain on your skid-steer loader. Route the hoses in such a fashion as to avoid pinching or chafing.

CAUTION! BE SURE CASE DRAIN COUPLER IS COMPLETELY ENGAGED. IMMEDIATE HYDRAULIC MOTOR SEAL FAILURE AND PLANETARY DAMAGE WILL OCCUR IF CASE DRAIN IS NOT SUCCESSFULLY CONNECTED.

7. Connect the electrical wire harness from the cold planer to the auxiliary electrical connector on the front of the skid-steer (if so equipped). If your skid-steer is not equipped with an electrical connector and you are using the BRADCO control handle, connect the wiring harness to the control handle and place the control handle inside of the skid-steer operator's station.

WARNING! Do not operate the cold planer from outside of the skid-steer operator's station.

8. Following all standard safety practices, start the skid-steer and run all cylinders through their full cycle to purge any air from the system. Check that all controls function in accordance with the operating control decal.

9. If your planer is equipped with an optional water kit, install the female coupler supplied to your water line coming from the water tank on the skid-steer. Connect the female coupler to the male coupler on the planer water kit.

   Your planer is now installed and ready for operation.

DISCONNECT INSTRUCTIONS

1. Center the planer on the sideshift frame.

2. Adjust depth and tilt setting to "0".

3. Set cold planer on a firm level surface.

4. Following Safety Shut Down Procedures; stop the engine and set the parking brake. Relieve any pressure in the hydraulic lines.

5. Disconnect the power and return hoses from the auxiliary hydraulics.

6. Disconnect the electrical wire harness from the auxiliary electrical connector or the BRADCO control handle and after turning the ball valve to the shut off position disconnect the water line at the couplers.

7. Following all standard safety practices and the instructions for disconnecting an attachment in your skid-steer operator's manual, disconnect the planer from your skid-steer allowing the mounting bracket to lower toward the ground as the skid-steer is disengaged.

8. Connect the hydraulic couplers on the attachment together to prevent contaminants from entering the hydraulic system.

GENERAL INFORMATION

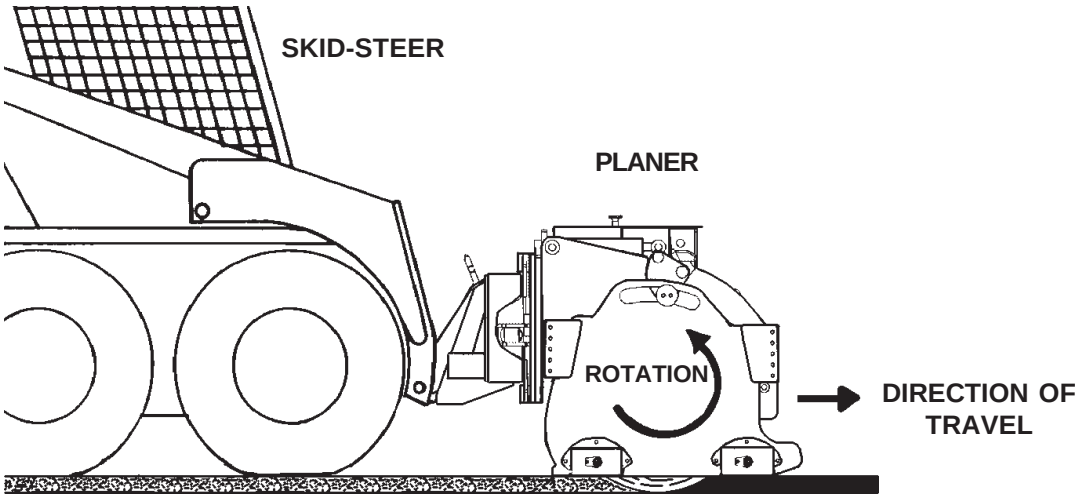
The BRADCO planer attaches to the toolbar/quick-attach mechanism of your skid-steer loader. Due to this arrangement, thorough knowledge of the skid-steer controls is necessary for machine operation. Read and understand your skid-steer operator's manual for information regarding skid-steer operation before attempting to use the planer.

Check the surface to be planed. The standard all purpose picks can be used to mill both asphalt and concrete. There are optional concrete picks that are recommended if the planer is to be used extensively for concrete. These picks do not perform as well when milling asphalt, especially in warmer weather.

Review the job at hand and determine the required depth and tilt of the cut and also the side shift position of the planer. Best performance is obtained when the cold planer is in the center position. Side shift should be used when visibility is a determining factor such as milling around manholes or when milling next to an obstacle such as a building. **NOTE: Although the wheel assemblies are standard, they may be removed when distance is a factor such as milling next to an obstacle or building.**

OPERATING INSTRUCTIONS

1. Clear area of all bystanders.
2. Lift the planer until the drum is off the ground and start planer rotation. (Teeth at the bottom of the drum must be moving in the same forward direction that the planer travels.)



NOTE: Mill only when the skid-steer is traveling forward. Do not operate when traveling in reverse.

NOTE: Hydraulic cylinders tilt the planer, adjust the depth of both the left and right side of the planer individually, and also shift the planer to the left or right.

3. Increase engine RPM and with the drum turning you can make any necessary adjustments to the side shift. Do not side shift the cold planer during milling operation. Once the desired side shift position has been achieved you are ready to begin. The drum will not cut in a side to side motion. Tilt and Depth control can both be activated during milling.

IMPORTANT: The drum MUST be turning to make any hydraulic adjustment to the planer.

4. Position the planer at the desired starting point. Set the left and right depth gauge to the desired depth mark on the planer. Maximum depth of each cut is determined by the type of material, the horsepower of the skid-steer being used and the size of the planer. It is recommended for maximum performance that you start at approximately .75" to 1" in concrete and 1.50" to 2" in asphalt.

5. With the engine at full RPM and the planer rolled back, lower the loader arms completely down and slowly roll out the planer until the weight of the planer is resting on the rear wheel assemblies. Continue to exert down pressure by rolling the loader forward until the front wheels of the planer are on the ground and the front wheels of the skid-steer are raised approximately 2-3 inches off the planing surface to assure sufficient pressure for stable operation.

NOTE: It is recommended to try a sample cut until the desired depth is achieved.

6. Slowly advance forward.

NOTE: If drum stalls you have been traveling too fast or cutting too deep. Back out of the cut until the drum restarts (make necessary adjustments) and then continue operation.

NOTE: If the drum tends to ride up out of the cut, decrease travel speed, be sure the planer is level (front to back) and exert down pressure until the planer is riding on the wheel assemblies. For optimal cutting and reduced vibration, maintain down pressure on the planer with all four planer wheels on the ground when cutting.

NOTE: Avoid side to side movement while planing as this may cause excessive drum wear or planetary failure.

7. When you have reached the end of the pass, stop the skid-steer and raise the planer out of the cut. Reposition skid-steer for the next cut and repeat steps 4, 5 & 6. If you are not starting a new cut, raise the planer and retract the drum into the planer housing using the depth control cylinders. Do not transport the planer with drum turning.

OPERATING INSTRUCTIONS

CAUTION! **Periodic observation must be made of the transmission oil temperature indicator when planing with high flow hydraulic systems.**

Depending on the ambient temperature and the duty cycle of the machine, hydraulic oil may overheat.

If indicator comes on, shut off the cold planer and allow the skid-steer to idle until the temperature falls below 160° Fahrenheit.

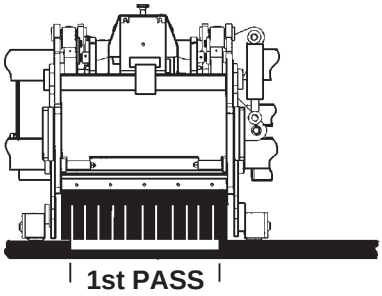
If the system continues running hot it may be necessary to clean any debris from the oil cooler and radiator. Check engine air filter and also the hydraulic oil level.

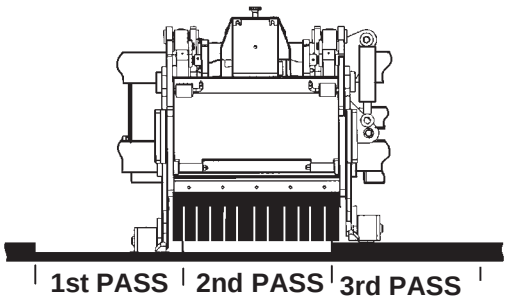
Continuous or excessive overheating may cause machine damage.

SPECIAL APPLICATIONS

LARGE AREA

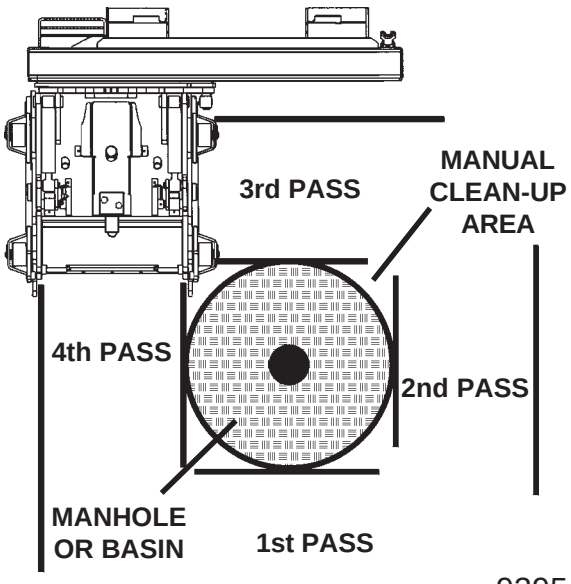
BRADCO'S independent depth control design allows for continuous milling. Instead of planing pass 1, 3, 5 and then going back and resetting the planer for passes 2 and 4, the BRADCO planer allows for individual depth control from the operator's seat to enhance performance and continually mill large areas.





MILLING AROUND MANHOLES

For best visibility when milling around manholes it is recommended that the planer be shifted to the right. The planer is not designed to mill around tight corners, therefore it is recommended that four to six passes be made on each side of the manhole. NOTE: The more passes the less amount of manual clean-up required.



9395
9-21-04-2

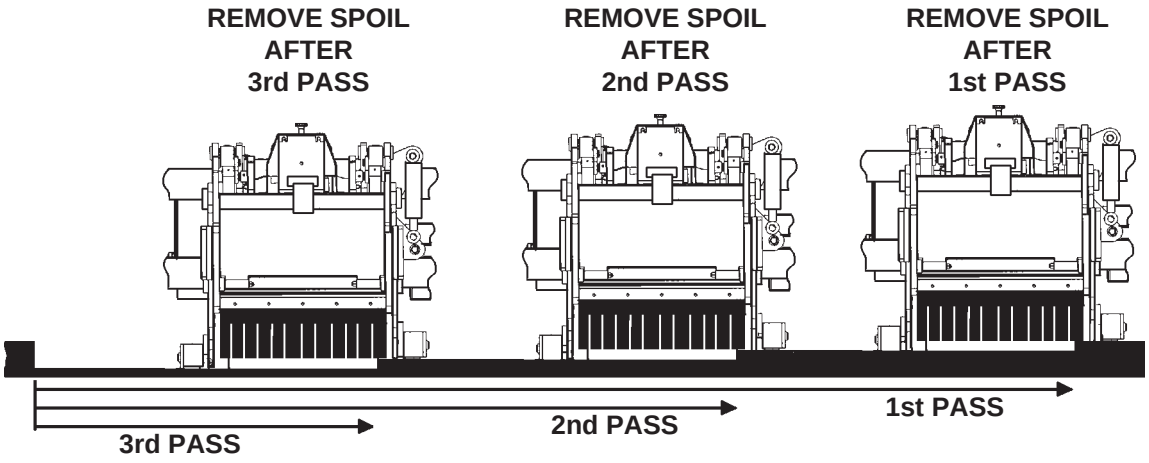
OPERATING INSTRUCTIONS

DEEP CUTS

To achieve a deep cut the width of the drum, make the first cut at the recommended depth for the material being milled and then reposition the planer at the beginning of the pass and reset for double the recommended depth. Example: Make the first cut with the depth controls set at 2" and then set the depth control at 4" for the second pass and so on and so forth until the desired depth is obtained.

To achieve a 6" cut of a large area it is recommended to cut the entire area at the recommended depth and then clear the spoil from the area before making the second cut. Removing the spoil between cuts will enhance the productivity of the planer and maintain an even cut.

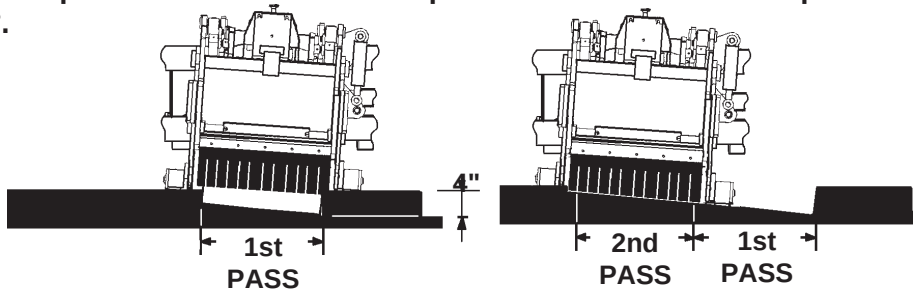
If trying to achieve a critical cutting depth it is recommended that the spoil from one cut be cleared away before making another pass. This will eliminate the possiblity of the planer riding on and off the spoil and creating an uneven surface.



MILLING TAPER CUTS

When adding to or joining new paved surfaces to existing paving, a taper cut may be required at the interacting joints so the new paving would appear seamless. See the chart below for the angle of cut per size of cold planer.

Example: To achieve a taper cut from 0" to 4" over a 4' distance with a 24" wide cold planer it is recommended that you set one side of the planer at 2" and the other at 4" and the tilt set at 4° for the first pass. Then make a second pass with both sides of the planer set at 0" and the tilt still at 4°.



MODEL	ANGLE OF CUT PER OFFSET			
	1"	2"	3"	4"
16" COLD PLANER	3°	6°	8°	NA
18" COLD PLANER	3°	6°	8°	NA
24" COLD PLANER	2°	4°	6°	NA
30" COLD PLANER	2°	4°	5°	7°
40" COLD PLANER	1.5°	3°	4°	6°

LUBRICATION

GENERAL INFORMATION

Economical and efficient operation of any machine is dependent upon regular and proper lubrication of all moving parts with a quality lubricant. Neglect leads to reduced efficiency, wear, breakdown and needless replacement of parts.

All parts provided with grease fittings should be lubricated as indicated. If any grease fittings are missing, replace them immediately. Clean all fittings thoroughly before using the grease gun.

IMPORTANT: Avoid excessive greasing. Dirt collects on exposed grease and greatly increases wear. After greasing, wipe off excessive grease from fittings.

LUBRICATION SYMBOLS

The following symbols are used on the lubrication diagram below. It is reproduced here with its meaning for your convenience.

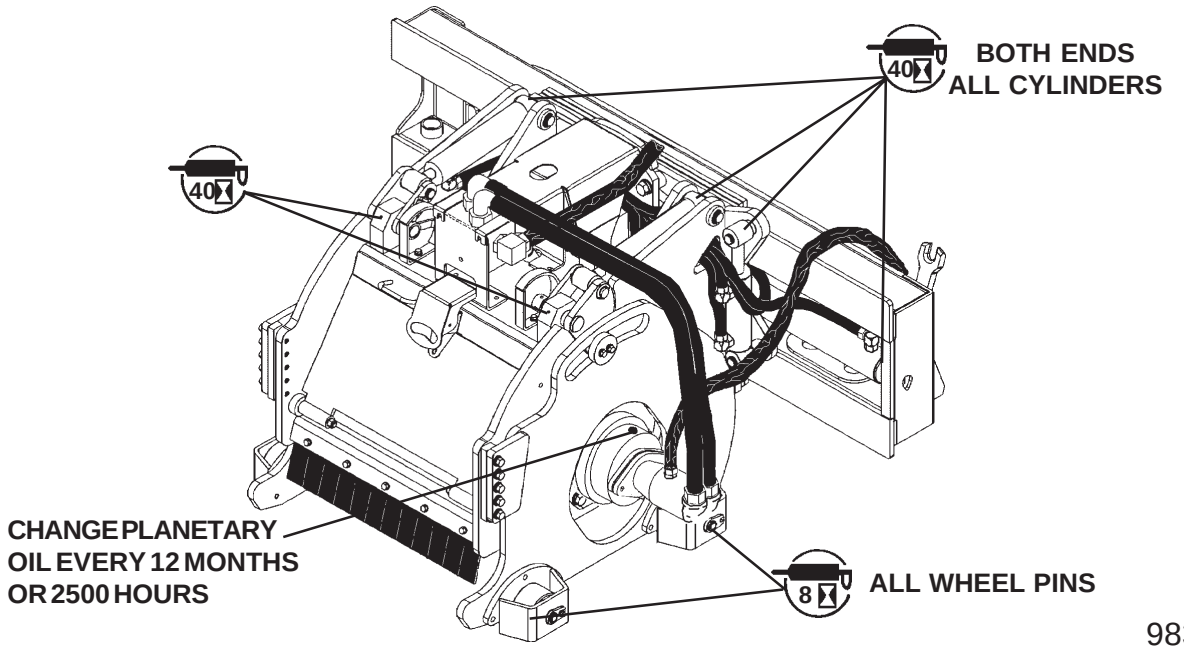
Lubricate daily or every 8 hours of operation, whichever comes last, with SAE Multi-Purpose Lubricant or equivalent SAE Multi-Purpose type grease.

Lubricate weekly or every 40 house of operation, whichever comes last, with SAE Multi-Purpose Lubricant or equivalent SAE Multi-Purpose type grease.

CAUTION! SHUT OFF ENGINE BEFORE LUBRICATING EQUIPMENT.

The planer planetary is a sealed unit. If there is any sign of oil leaks please contact your nearest BRADCO dealer before carrying out any repairs, as there can be other causes for seal leaks. The planetary uses the Gear Oil (Castrol SP 320) for lubrication of gears and bearings. The unit holds approximately 2 quarts of gear oil.

The planetary gear oil should be drained and replaced after the first 8 months of use. Thereafter every 12 months or 2500 hours - whichever comes first.



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MAINTENANCE & SERVICE

GENERAL INFORMATION

Regular maintenance is the key to long equipment life and safe operation. Maintenance requirements have been reduced to an absolute minimum. However it is very important that these maintenance functions be performed as described below.

WARNING! Never do any maintenance to the planer while it is running. Exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE BEFORE working on or around the planer.

DAILY

- Check to be sure case drain coupler is completely engaged.
- Check skid-steer hydraulic system to ensure an adequate level of hydraulic oil.
- Check all hardware and tighten if necessary. See Section "O" for Bolt Torque Specifications.
- Check hydraulic system for hydraulic leaks.
- Check for missing or illegible Safety / Warning Decals.
- Check picks for freedom of rotation, flat spots and wear. Replace worn or missing picks or any picks that are not rotating freely or have flat spots.
- Visually inspect the machine for worn parts or cracked welds and repair as necessary.
- Lubricate grease fittings on Wheel pivot pins.

EVERY 40 HOURS

- Lubricate grease fittings on cylinder ends and front of planer.

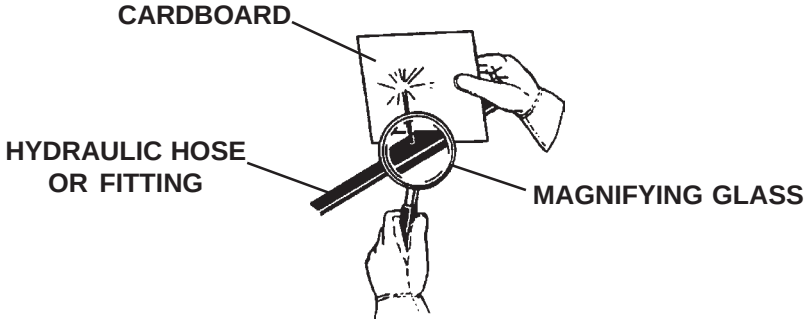
EVERY 2500 HOURS OR 12 MONTHS

- Change gear oil in planetary.

WARNING! Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks.

Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.

If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.



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IMPORTANT: When replacing parts use only factory approved replacement parts. Manufacturer will not claim responsibility for use of unapproved parts or accessories and/or other damages as a result of their use.

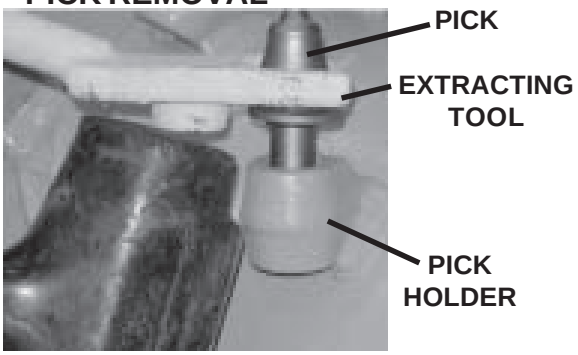
PICK REPLACEMENT

Picks should be replaced if you are changing to a different application pick, they are broken, worn, flat spot or are seized in the pick holder and do not rotate freely.

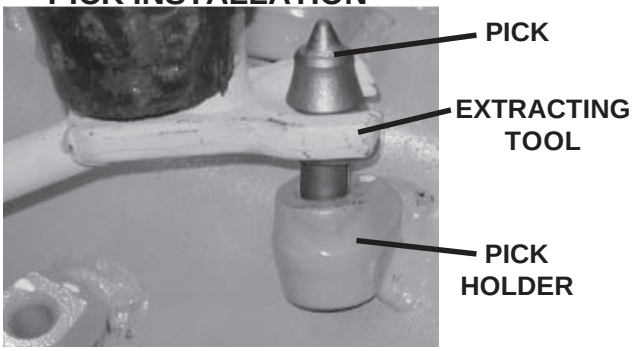
WARNING! Always wear safety glasses with side shields when striking metal. Failure to heed could result in serious injury to the eyes or other parts of the body.
Do all pick maintenance through access door.
DO NOT attempt to check the picks with the planer in a raised position without first blocking the planer. Before exercising the MANDATORY SAFETY SHUTDOWN PROCEDURE find an elevated surface to set the planer on or have a second person block the planer in place before shutting down the machine.

1. Open front access door.
2. Rotate the drum until the pick to be removed is conveniently accessible.
3. Hold the extracting tool (pick puller) in one hand and place the jaws in the groove of the pick, with the offset handle pointing away from the pick holder.
4. Using a lead hammer or rubber-headed mallet, hit the raised pad on the tool until the pick starts to move. Continue tapping until the pick is removed.
5. Insert the new pick into the jaws of the extracting tool (pick puller) so that the raised pad of the tool is pointing in the same direction as the pick point.
6. Position the new pick in the pick holder on the drum and with a lead hammer or rubber-headed mallet, hit the raised pad of the tool to start the pick into the pick holder. (Clean out any foreign material from the pick holder before installing the new pick.)
7. Once the pick is started into the pick holder strike the tool pad one strong blow to pop the pick into the holder.

PICK REMOVAL



PICK INSTALLATION

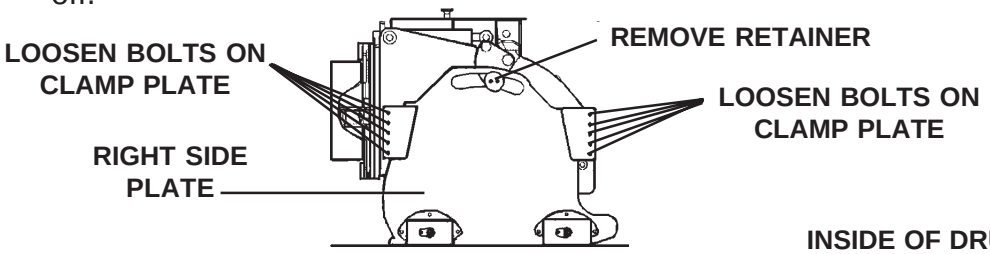


The pick is properly seated when its shoulder is against the face of the pick holder. Check to be sure the pick rotates freely.

CHANGING THE DRUM

Due to the weight of the unit, place the planer in a convenient location with a hoist available for lifting the planer off the drum.

1. Remove the right side plate by first removing the two bolts in the retainer and then loosen the ten .50" bolts on the clamp plates. Slide the right side plate off.



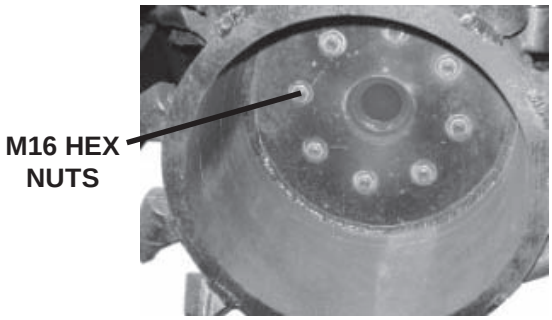
2. Remove the eight M16 hex nuts securing the drum to the planetary.

3. Using a pry bar, pry the drum off of the planetary and slide out until the drum clears the planetary. lift the planer off of the drum.

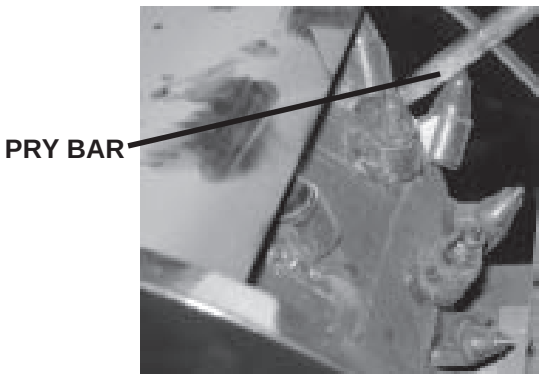
4. Install the new drum by positioning it over the studs on the planetary and installing the existing M16 hex nuts using Locktite 271 (Red) and torquing to 155 ft. lbs.

5. Reinstall the right side plate.

INSIDE OF DRUM



PRY DRUM OFF OF PLANETARY



CHANGING THE PLANETARY

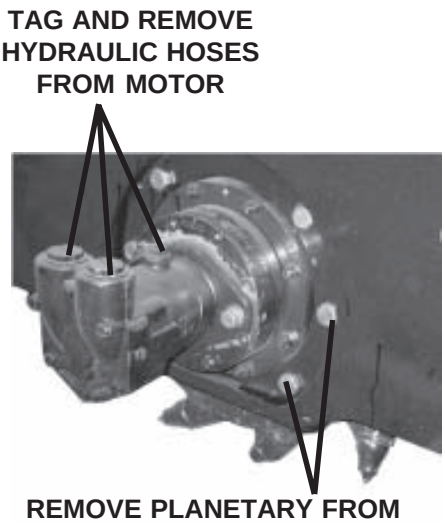
To gain access to the planetary the drum must first be removed. Follow the above procedure for removing the drum.

1. Tag and disconnect the power and return hoses along with the case drain hose from the hydraulic motor and plug the motor ports to prevent contaminates from entering the hydraulic system.

2. Remove the .62" bolts securing the planetary to the planer and remove the planetary.

3. Check to be sure the new planetary is filled with oil. If not, fill with approximately 2 quarts of Castrol SP 320 gear oil.

4. Remove the hydraulic motor from the planetary. Scrape any silicone from the hydraulic motor and apply new RV 10 silicone to the motor to seal the connection between the motor and the planetary. Bolt the hydraulic motor onto the new planetary using the existing hardware.



5. Position the new planetary into the planer housing and reinstall the .62" capscrews, flat washers and lock nuts. Check to ensure that the hydraulic motor is in the correct position with the ports turned up. Torque to specification

6. Reinstall the drum as described in "CHANGING THE DRUM".

7. Re-connect the hydraulic hoses and fittings to the motor.

CHANGING HYDRAULIC MOTOR

1. Position the planer on its side or in such a fashion that the planetary oil will not leak out when replacing the motor.

2. Tag and disconnect the power and return hoses along with the case drain hose from the hydraulic motor.

3. Remove the capscrews securing the motor to the planetary.

4. Scrape the mating surface of the planetary, removing all existing silicone, to prepare it for the new motor.

5. Apply new RV 10 silicone to the motor to seal the connection between the motor and the planetary. Bolt the new hydraulic motor onto the planetary using the existing hardware. (Check to ensure that the hydraulic motor is in the correct position with the ports turned up.) Torque to specification

6. Re-connect the hydraulic hoses and fittings to the motor.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Motor on the planer will not operate.	Auxiliary hoses not hooked up to the skid-steer.	Engage Couplers
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
	Hydraulic motor damaged or seals blown.	Call Bradco service department for instructions.
	Skid-steer auxiliary valve not engaged.	Engage auxiliary valve.
Drum rotates sluggishly.	Insufficient hydraulic flow from the skid-steer.	Refer to skid-steer's owners manual.
	Damaged quick coupler.	Replace if necessary.
	Hydraulic motor damaged or seals blown.	Call Bradco service department for instructions.
	Oil filter on skid-steer is dirty.	Refer to skid-steer's owners manual.
Leaking Oil.	Loose or damaged hydraulic line.	Tighten or replace.
	O-Rings on fittings damaged.	Replace if necessary.
	Hydraulic motor damaged or seals blown.	Call Bradco service department for instructions.
	Fittings loose or damaged.	Tighten or replace.
	Cylinder seals damaged.	Replace cylinder seals.
Insufficient power.	Insufficient hydraulic flow from the skid-steer.	Refer to skid-steer's owners manual.
	Relief valve setting adjusted too low.	Refer to skid-steer's owners manual.
	Hydraulic motor damaged or seals blown.	Call Bradco service department for instructions.
	Oil filter on skid-steer is dirty.	Refer to skid-steer's owners manual.
Drum rotates in the wrong direction.	Hoses from the valve to the motor incorrectly connected.	Switch hoses at the motor end.
Excessive vibration during planing operation.	Picks are worn or broken.	Visually inspect the picks and replace as necessary.
	Picks contain flat spots or are not rotating freely.	Visually inspect the picks and replace as necessary.
	Insufficient down force due to incorrect operating procedure.	Refer to the Operating section of this manual.

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Excessive oil temperature.	Hydraulic oil level too low.	Refer to skid-steer's owners manual
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
	Hydraulic oil or oil filter in skid-steer is dirty.	Refer to skid-steer's owners manual.
	Relief valve setting adjusted too low.	Refer to skid-steer's owners manual.
	Couplers not engaged.	Engage couplers.
A Hydraulic cylinder not operating.	Insufficient hydraulic flow from the skid-steer.	Refer to skid-steer's owners manual.
	Cylinder rod bent.	Visually inspect the cylinder for damage.
	Cylinder seals damaged.	Replace cylinder seals.
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
All hydraulic cylinders not functioning.	Blown fuse on skid-steer.	Refer to skid-steer's owners manual.
	Damaged electrical wiring.	Test and replace if necessary.
	Solenoid valve spool bent.	Replace spool.
	Nut on Solenoid valve too tight	Loosen nut.
Hydraulic cylinders only operating in one direction.	Contaminants in the hydraulic system and solenoid valve.	Remove spool from solenoid valve and check for foreign material. Clean or replace.
		Remove spool from solenoid valve and check seals for damage. Replace if neces-sary.
	Damaged electrical wiring.	Test and replace if necessary.
	Solenoid valve spool bent.	Replace spool.
	Nut on Solenoid valve too tight	Loosen nut.

BOLT TORQUE

BOLT TORQUE SPECIFICATIONS

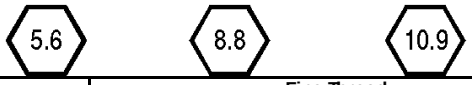
GENERAL TORQUE SPECIFICATION TABLE

Use the following torques when special torques are not given. These values apply to fasteners as received from suppliers, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads. Remember to always use grade five or better when replacing bolts.

SAE Grade No.		2				5				8*			
Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary													
		TORQUE				TORQUE				TORQUE			
Bolt Size		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	30.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	25	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1-1/8	25.58	-	-	-	-	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1-1/4	31.75	-	-	-	-	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1-3/8	34.93	-	-	-	-	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1-1/2	38.10	-	-	-	-	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

* Thick Nuts must be used with Grade 8 bolts

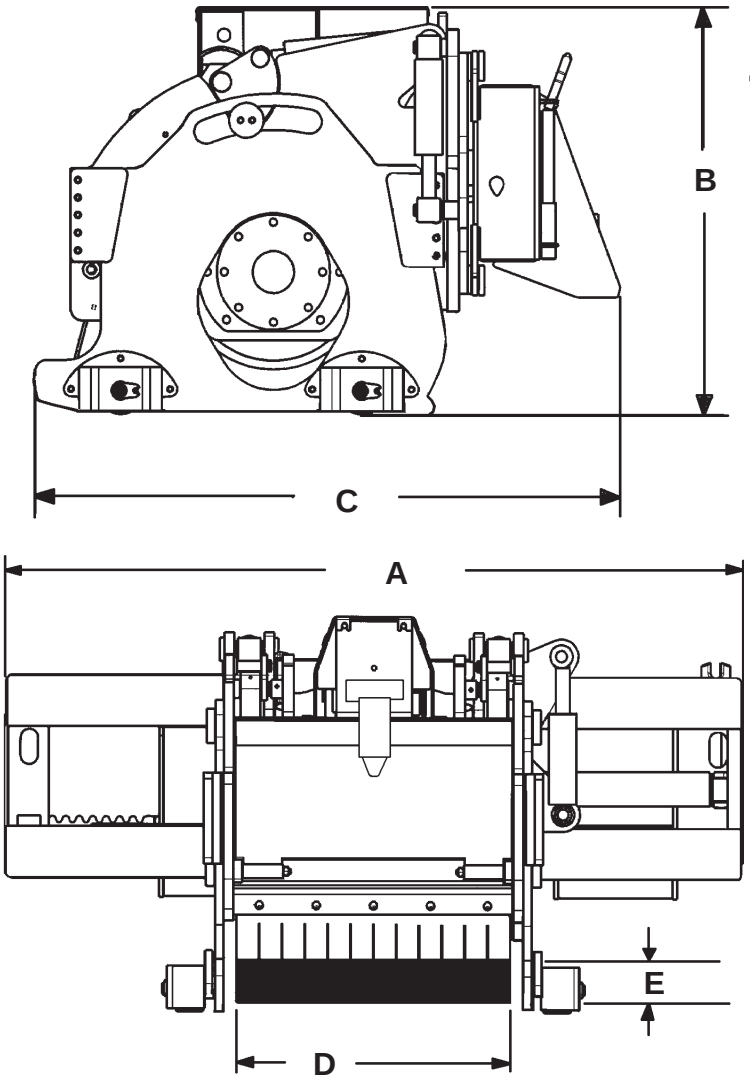
METRIC BOLT TORQUE SPECIFICATIONS



Size of Screw	Grade No.	Coarse Thread			Fine Thread		
		Ptich (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-9.4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

SPECIFICATIONS

COLD PLANER



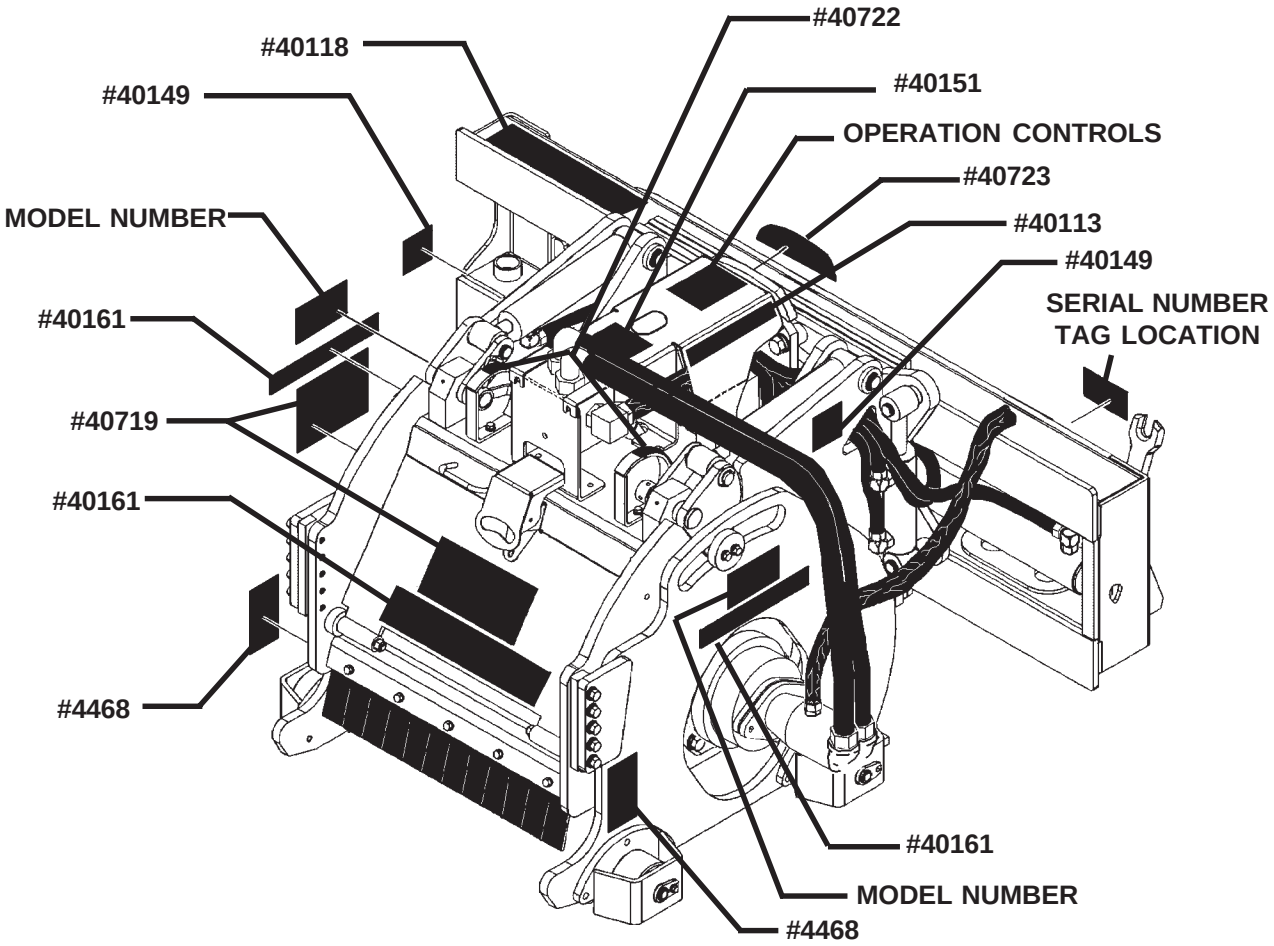
DESCRIPTION	SPECIFICATION 16"	18"	24"	30"	40"
A. Overall Width	64.94"	64.94"	64.94"	64.94"	64.94"
B. Overall Height	34.57"	34.57"	34.57"	34.57"	34.57"
C. Overall Length	50.30"	50.30"	50.30"	50.30"	50.30"
D. Planing Width	16.00"	18.00"	24.00"	30.00"	40.00"
E. Planing Depth	0"-5.00"	0"-5.00"	0"-5.00"	0"-5.00"	0"-5.00"
Drum Diameter		22.00"	22.00"	22.00"	22.00"
Number of Picks (Full size drum)	43	45	57	69	89
Weight (lbs)	2150#	2200#	2400#	2600#	3100"
High Flow Requirement	22-40 GPM				
Operating Pressure	2500-3500 PSI				

DECALS

DECAL PLACEMENT

GENERAL INFORMATION

The diagram on this page shows the location of the decals used on the BRADCO Cold Planers. The decals are identified by their part numbers, with reductions of the actual decals located on the following pages. Use this information to order replacements for lost or damaged decals. Be sure to read all decals before operating the attachment. They contain information you need to know for both safety and product longevity.



IMPORTANT: Keep all safety signs clean and legible. Replace all missing, illegible, or damaged safety signs. When replacing parts with safety signs attached, the safety signs must also be replaced.

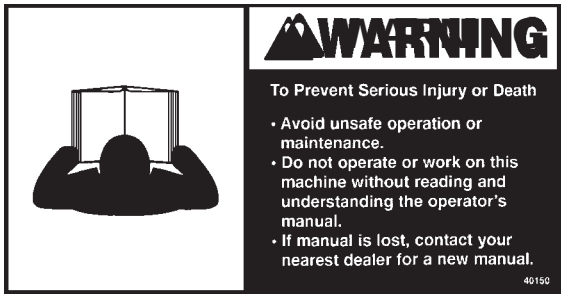
REPLACING SAFETY SIGNS: Clean the area of application with nonflammable solvent, then wash the same area with soap and water. Allow the surface to fully dry. Remove the backing from the safety sign, exposing the adhesive surface. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

DECALS

STAND CLEAR
PART #40161

DANGER! PINCH POINTS
PART #40149

WARNING! HIGH PRESSURE FLUID
PART #40151



WARNING! READ MANUAL
PART #40150

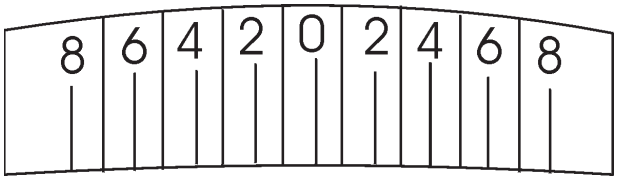
DANGER! FLYING DEBRIS
PART #40719

WARNING!
PART #4468

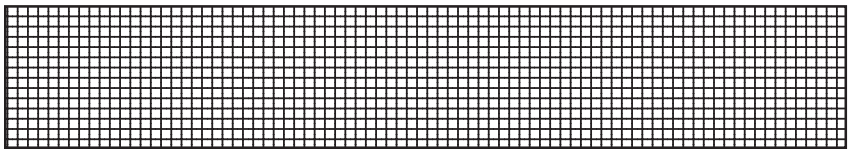
DECALS

BRADCO

BRADCO LOGO
PART #40113



ANGLE INDICATOR
PART #40723



NON-SLIP SURFACE DECAL
PART #40118

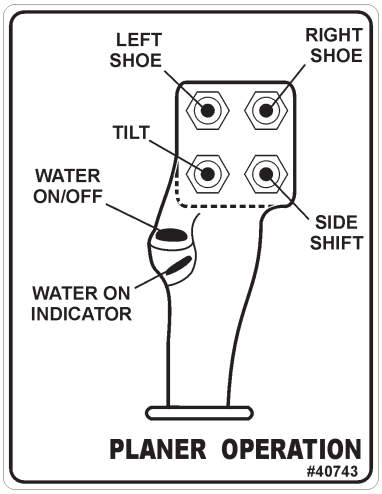
DEPTH INDICATOR
PART #40722

HP1000

MODEL NUMBER HP1000 (40" PLANER)
PART #407934

HP750

MODEL NUMBER HP750 (30" PLANER)
PART #40793



OPERATION CONTROLS
PART #40743

HP600

MODEL NUMBER HP600 (24" PLANER)
PART #40792

HP450

MODEL NUMBER HP450 (18" PLANER)
PART #40791

HP400

MODEL NUMBER HP400 (16" PLANER)
PART #40790

PREDELIVERY CHECKLIST

GENERAL INFORMATION

The following is a list of areas that should be inspected by the dealer prior to delivery of the attachment to the customer. The customer should check the list and make sure that the dealer has completed the inspection. Completion of this checklist will help insure that the customer receives the attachment in complete working order, ready to install.

PREDELIVERY CHECKLIST - CHECK AND ADJUST AS NECESSARY

1. _____ Visually inspect the attachment for bent, cracked, damaged or missing parts. Check for any other irregularities.

2. _____ Check and lubricate attachment if necessary. See "Lubrication" Section H.

3. _____ Check bolts for tightness daily. Retighten after the first eight working hours.

4. _____ Remove paint from unfinished chrome surfaces of cylinders.

5. _____ Run cylinders through their full cycle to purge any air from the system.

6. _____ Check all hydraulic connections for leaks and hoses for proper positioning to reduce chafing and binding.

7. _____ Make sure all decals are not damaged or missing and are in their correct location. See "Decals" Section Q.

8. _____ Make sure customer has the necessary couplers to attach the power and return hoses to the skid-steer auxiliary hydraulic couplers.

9. _____ Complete and return the manufacturers "Warranty Validation From" and sign your dealership predelivery checklist.

LIMITED WARRANTY

All new Bradco products are warranted to be free from defects in materials or workmanship which may cause failure under normal usage and service when used for the purpose intended.

In the event of failure within twelve (12) months from initial retail sale, lease or rental date (excluding cable, ground engaging parts such as sprockets, digging chain, bearings, teeth, tamping and demolition heads, blade cutting edges, pilot bits, auger teeth, auger heads & broom bristles), if after examination, Bradco determines failure was due to defective material and/or workmanship, parts will be repaired or replaced. Bradco may request defective part or parts be returned prepaid to them for inspection at their place of business at Delhi, Iowa, or to a location specified by Bradco.

Any claims under this warranty must be made within fifteen (15) days after the Buyer learns of the facts upon which such claim is based. All claims not made in writing and received by Bradco within the time period specified above shall be deemed waived.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL BRADCO BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGE.

BRADCO'S LIABILITY FOR ANY AND ALL LOSSES AND DAMAGES TO BUYER, RESULTING FROM ANY CAUSE WHATSOEVER, INCLUDING BRADCO'S NEGLIGENCE, IRRESPECTIVE OF WHETHER SUCH DEFECTS ARE DISCOVERABLE OR LATENT, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PARTICULAR PRODUCTS WITH RESPECT TO WHICH LOSSES OR DAMAGES ARE CLAIMED, OR, AT THE ELECTION OF BRADCO, THE REPAIR OR REPLACEMENT OF DEFECTIVE OR DAMAGED PRODUCTS.