



Model S-1011 Model S-1011R

Hand Held

SKINNER

USDA APPROVED
CE



INSTALLATION, OPERATION, MAINTENANCE, PARTS LIST & DIAGRAMS



BEST & DONOVAN

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WARNING

Operator of the B&D "Model S-1011 & S-1011R Skinner" MUST, when operating this tool, wear:

- 1) a stainless steel mesh glove on the free hand and
- 2) full fore and upper arm guards on the free arm

ATTENTION – MANAGEMENT

The laminated warning sign provided with the "Model S-1011 & S-1011R Skinner" MUST be hung at the point of operation, clearly visible to the operator.

INSTALLATION INSTRUCTIONS

The "B&D Air Model S-1011 & S-1011R Hand Held Skinner" has a new weight of 3.5 pounds (1.587 Kilograms) and may be installed with or without the use of an overhead counterbalance.

The "S-1011 & S-1011R" is available with a # 6387049 Suspension Hanger which is recommended for installations over a conveyor or table.

A Kromer Balancer #6342100 is suitable for suspending either tool. This Balancer has a tension range of 2.2 – 4.4 lbs. (1.0 – 1.99 KG) and a cable travel of 8 feet (2.4 meters). The Kromer Balancer features permanent lubrication, is equipped with a 3/32" (2.38 mm) diameter stranded steel aircraft cable that features a "Ratchet Lock" which allows locking of the cable at desired positions for free tool applications of tool changes.

AIR REQUIREMENTS

The "Model S-1011 & S-1011R Hand Held Skinner" must be supplied with clean, dry air through the use of a #6337893 – 1/2" (12.70 mm) Air Filter, Lubricator & Regulator Unit. The Lubricator should be filled with a good grade USDA approved 10 Weight mineral oil set to approximately 7 drops per minute.

Use high CFM flow disconnects. Male #6349078 and Female #6349075. Air is to be supplied at a pressure of 90 PSIG (6 BAR). Supply air hose size is to be no smaller than 5/16" (8 mm) I.D. and no longer than 10 feet (3.04 meters) in length.

Pneumatic tools should always be installed and used in accordance with A.N.S.I. B186.1 "Safety Code for Portable Tools."

WARNING

Always exercise care when operating or performing maintenance repairs, changing blades and making adjustments.

Always disconnect the Air Supply Line before attempting to work on the "S-1011 or S-1011R Hand Held Skinners".

Never allow any part of your person to be in the path of this tool when in service (operation).

Always grip the "S-1011 or S-1011R" Skinner hand-piece firmly.

MAINTENANCE INSTRUCTIONS

Preventive maintenance is the best First Step of good maintenance. A periodic check should be made to replace worn parts. A worn part replaced in time may save extensive repairs later.

This is a precision tool made up of precision parts and should be maintained with extreme care. *Do not squeeze* the tool or parts in a holding devise or otherwise misuse. Too much pressure exerted in holding the tool may cause distortion of the parts. Be sure you have the correct tools and fixtures before disassembling or assembling this tool. When assembling or disassembling parts which have a press fit, apply pressure evenly to the part. To assemble or disassemble Bearings, the pressure should be applied to the face of the Inner and Outer Race, whichever is adjacent to the mating part. If this not done, forcing the Bearing onto the part will distort the Races making it necessary to replace both parts.

Before disassembling this tool, the area around the work bench should be clean and free from metal chips and other foreign matter. It is good practice to spread a clean cloth on the work bench to prevent the loss of small parts.

It is important that all parts are thoroughly cleaned and inspected before assembling. The slightest particles of dirt can create excessive run-out in Spindle or out of squareness in the Bearing mounting, causing vibrations and loss of speed, ultimately damaging the tool.

Before reassembling, all parts should be washed and inspected. Replace any worn or defective parts. Lubricant is recommended for installation of "O" Rings.

CLEANING AND STERILIZATION

CAUTION

During production, dip the Skinner Housing section in a sterilizer for only 2 to 3 seconds at a time. The Skinner **MUST NOT** be left in the sterilizer longer than 3 seconds. If more cleaning is needed, remove the Skinner Housing, Toothroll Assembly, Cleanout Bar and Blade according to this instruction manual.

Leaving the Skinner Housing section in sterilizer water while not in use will cause damage to Skinner parts.

To maximize the power and efficiency of the "S-1011 or S-1011R Skinners", sterilize only the Head section when necessary.

When Skinner is not in use, hang unit with the Hanger provided to prevent damage to the tool and possible injury.

DAILY CLEANING

The complete exterior of the "S-1011 & S-1011R Skinner" may be sprayed clean with water.

NOTE: Water should not be allowed to enter the Air Port at the end of the Skinner Handle.

Flush the tool with solution of three parts cleaning solvent and one part light weight oil after 40 hours of operation. After flushing, apply a small amount of 10 weight Spindle Oil in to the Air Inlet and run for one minute to insure proper lubrication.

If the Skinner is not to be used right away, hang the Skinner with the Head pointing down to allow the oil to penetrate internal parts.

CLEANING INSTRUCTIONS

1. Remove Blade and both Shaft Retainers (#6387002 and #6387003).
2. Remove #6387019 Toothroll Shaft, Toothroll Assemble and #6387071 Toothroll Cleanout Bar.
3. Clean all parts with soap, water, and a soft bristled brush to remove all foreign matter.
4. Coat #6347019 Toothroll Shaft with USDA approved grease and reassemble above parts.

NOTE: Make sure that the sharp edge of the teeth of the Toothroll Assembly are *pointed towards the Blade*.

When cleaning Motor Housing and Housing Assembly take care not to allow water to enter the Air Motor at rear.

After cleaning add a few drops of oil to the Air Filter while depressing the Trigger. This allows the oil to enter the internal parts before turning over to hook up to the Air Line for running.

The machine should always be hung vertical, with the Air Inlet up for storage.

CHANGING THE BLADE

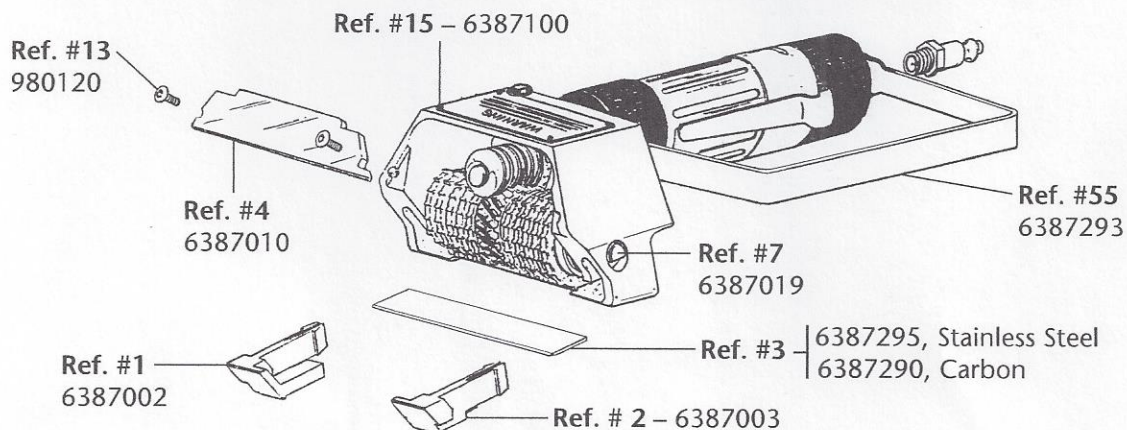
WARNING

ALWAYS DISCONNECT THE AIR SUPPLY LINE from the "S-1011 & S-1011R Hand Held Skinner" before attempting to remove or replace the Blade. Even dull Blades may be sharp enough to cut your person – **USE EXTRA CAUTION WHEN CHANGING BLADES.** The use of Safety Gloves is also recommended while doing any work around the Blade area.

1. Lay the cleaned "S-1011 or S-1011R Skinner" on a clean work bench, Blade side up.
2. Remove the Blade and Shaft Retainers, LH and RH (Ref. #1 and #2) by squeezing the prongs of each Retainer at the backside of the Toothroll Housing (Ref #15).
3. Push each Retainer out through the front of the Housing. The Blade should then fall free from the tool.

NOTE: Be careful not to turn the Skinner over as the Toothroll Shaft (Ref. #7) will fall out, possibly allowing the Toothroll and Cleanout Bar to fall out as well.

4. Clean all Blade and Retainer surfaces **thoroughly**.
5. Re-insert the left and right Blade Retainers to about 1/3 of the way into the Housing.
6. Insert the Blade (Ref. # 3) with ground side out and forward. Sharp edge of Blade should be located against bottom corner of the Retainer lip on both sides.
7. Apply pressure evenly to the bottom of the Blade Retainers. The Blade and Retainers should slide smoothly together into the Housing and lock in place.



Blade Changing View
(No tools required ... Guard stays on)

PLANETARY GEAR DISASSEMBLY

WARNING

ALWAYS DISCONNECT THE AIR SUPPLY LINE from the "S-1011 or S-1011R Hand Held Skinner" and remove Blade according to the "**Changing the Blade**" instructions on page 5, before attempting these repairs.

NOTE: Refer to the Part Listings and Diagrams (pages 10 & 11) when reading and performing these directions.

1. Loosen the Bolt #52 at the top of the Toothroll Housing and remove the entire Head Assembly from the the Air Motor Assembly.
2. Using the large Flats (1-1/4") of the Ring Gear #21, clamp the Air Motor Assembly in a soft jaw vise, (not too tight), with the Air Connection fitting pointing up.
3. Using a Strap Wrench, loosen (counter clockwise) the Head and Bushing Assembly #37 from the Ring Gear Assembly.

NOTE: *Be careful not to let the Air Motor Assembly #51 fall out of the Head and Bushing Assembly.*

4. Remove the Spacer #27 and place on a clean cloth.
5. Remove the Ring Gear Assembly from the vise. Keep this assembly inverted so that the Planet Gear #25 and their Bearings #24 don't fall out. Also, make sure that the Sun Gear #26 remains in place.
6. Clamp the Worm Gear #8 in a soft jaw vise so that the Planet Gears remain face up and the Ring Gear can turn free.

SPECIAL NOTE: PLANETARY GEAR WRENCH MODIFICATION for removing the Worm Gear #8 from the Spindle Assembly #23, you will need to modify a 7/32" Allen Wrench on its short end. Simply grind the edges slightly, about 1/4", up so that it will fit snugly in the center of the Sun Gear #26. Either use this wrench on the assembly being repaired or tap it into a used, but good condition, Sun Gear for a permanent "S-1011 or S-1011R Skinner" tool.

7. Insert the modified wrench into the Sun Gear #26 and rotate clockwise while holding the Ring Gear with an Open End Wrench (1-1/4"), until the Ring Gear and Shaft Assembly are free from the Worm Gear.

NOTE: *The threads on the Worm Gear are left handed.*

8. Remove the Front Seal #10 and replace the O-Ring #11 if needed.
9. Remove the Sun Gear #26, 3 Planetary Gears #25 and their Bearings #24. Place them on a clean cloth and check for spindle wear.
10. Turn the Ring Gear over, (open side down) and press out the Spindle Assembly #23.
11. Remove the Bearing Locknut #16 and the Spring Washer #17.

PLANETARY GEAR DISASSEMBLY CONTINUED

12. Press the Bearing #18, Inner Spacer #19 and the Spacing Washer #20 out of the Ring Gear using the large end OD a #21-71-1 Bearing Driver.
13. Reverse the procedures for re-assembly. Be sure to replace all Spacers, O-Rings and Spring Washers as per the Parts Diagrams.

NOTE: Best & Donovan recommends the replacement of Bearing #18 when Gearing Assembly #50 is disassembled. Check all parts for wear and replace, if needed, with **Genuine Best & Donovan Parts**.

#6387171 AIR MOTOR DISASSEMBLY

1. Remove Gearing Assembly #50 from the tool. *Planet Gears may fall free – USE CARE.* Follow Steps 1 - 4 from the Planetary Gear Disassemble section.
2. Remove the Sun Gear from the Motor Shaft.
3. To remove the Motor from the Head Assembly, gently tap the side of the Housing against something soft, like a piece of wood, at a slight downward angle. The Motor Assembly #51 will come out slowly. Make sure that it is caught before it falls out.
4. Grasp the Motor Assembly and tap the Drive End on the Rotor #32 with a soft faced Hammer. The Motor will come apart.

NOTE: The Bearings are light press fit in the End Plates. Bearing #26 is press fit on the Rotor #32.

5. Remove End Plate #35, Bearing #36 and Spacer #34 from the Rotor #32.

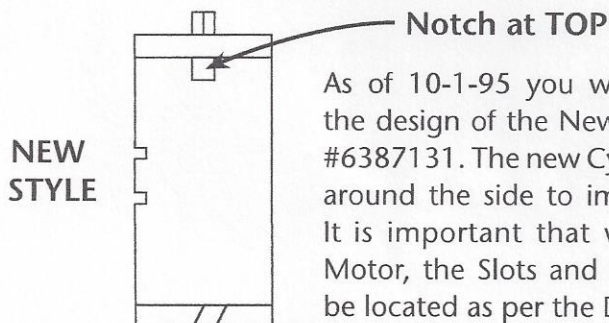
NOTE: Check all parts for wear and replace with **Genuine B&D Parts** if necessary.

#6387171 AIR MOTOR ASSEMBLY

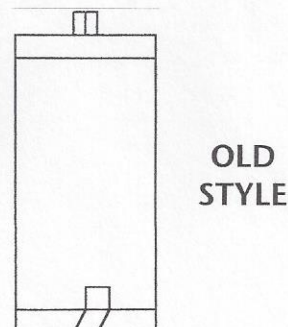
IMPORTANT

Assembly should be done on a clean work surface. Dirt or any kind of foreign materials in these procedures could cause Assembly failure.

1. Assemble the Spacer #34 and the End Plate #35 to rotor #32.
 2. Press Bearing #36 on the Rotor and into End Plate #35.
- NOTE:** Press Bearing on its Inner Race so not to damage Bearing.
3. Coat five (5) Rotor Blades with a thin layer of Spindle Oil and assemble to Rotor Slots – **STRAIGHT SIDE OUT**. Be careful not to get dirt on the Blades while assembling.



As of 10-1-95 you will see a difference in the design of the New Style Motor Cylinder #6387131. The new Cylinder design has Slots around the side to improve flow of power. It is important that when assembling the Motor, the Slots and Notch in the Cylinder be located as per the Diagram below.



#638171 AIR MOTOR ASSEMBLY CONTINUED

4. Coat the inside diameter of the Cylinder #31 with Spindle Oil and assemble over Rotor.

NOTE: Air Inlet Slots in the End of the Cylinder **MUST BE ALIGNED** with the Air Inlet holes in the End Plate #35.

NOTE: If the Cylinder is reversed to where the Slots are on the other side, the Skinner when assembled will run slow and have little power.

5. Assemble Bearing #28 to End Plate #29 then assemble to Rotor #32. Press on the Inner Race of the Bearing when Assembling.

NOTE: Make sure that after the Motor is re-assembled that the Rotor spins freely in the assembly. If it does not, the Rotor Blades may need to be sanded on the ends slightly. The tolerances are so close on these motors that sometimes the Rotor Blades are slightly too long and bind up the Motor. Tap off the drive side End Plate, shake the Blades out and sand the end of each Blade slightly. Re-assemble and try to spin the Rotor again.

6. Insert Pin #30 into .096 diameter blind hole of bottom Motor cavity in Housing.
7. Align notches of the End Plates and Cylinder, then install Motor into Housing aligning notches with Pin #30.
8. Assemble Spacer #27 to Motor with Counterbalance facing Motor.
9. Assemble Gearing Assembly #51 to tool.

THROTTLE LEVER HOUSING DISASSEMBLY

1. Clamp Air Inlet Adapter #46 in a soft jawed vise.
2. Unscrew Housing #37 with a strap type wrench. (Counter-clockwise)
3. Remove diffuser Washer #44, Exhaust Cap #43. Two (2) Filters #42 Spring #41 and Valve Rod #40.

NOTE: Do not remove or adjust rubber portion of Valve Rod #44 as it is factory preset.

4. Remove Screen #47 from the Inlet Adapter #46.
5. Remove the Throttle Pin #38 and Spring #39.

THROTTLE LEVER HOUSING ASSEMBLY

1. Install Spring #39 and Throttle Pin #38.

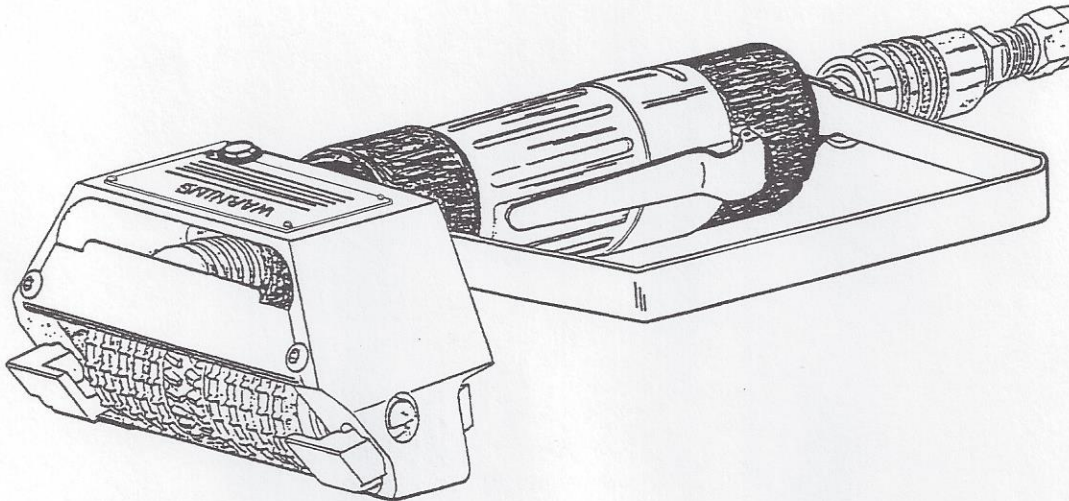
NOTE: Align Slot in Throttle Pin with Air Inlet holes in Housing.

2. Install Valve Rod Assembly #40 into Housing.

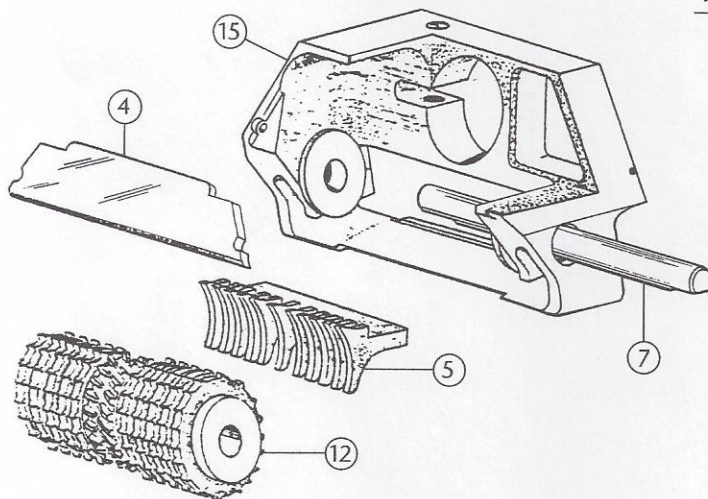
NOTE: Throttle Pin #38 should not pull out when the Valve Rod is Properly seated.

3. Install the two (2) Filters #42 into the Exhaust Cap #43.
4. Install Exhaust Cap #43 to the Housing aligning Lever with Throttle Pin #38.
5. Assemble Diffuser Washer #44 and Inlet Adapter #46.
6. Clean or replace Screen #47 in the Inlet Adapter #46.

"S-1011 & S-1011R SKINNER" ASSEMBLED VIEW

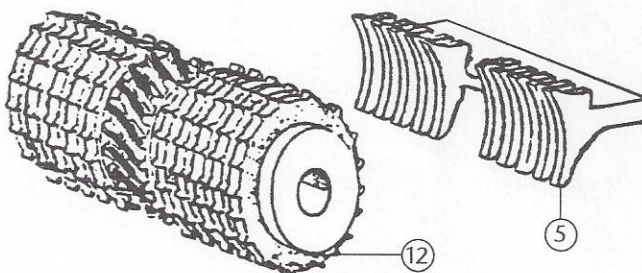


OLD STYLE – Center Clean-Out Tooth



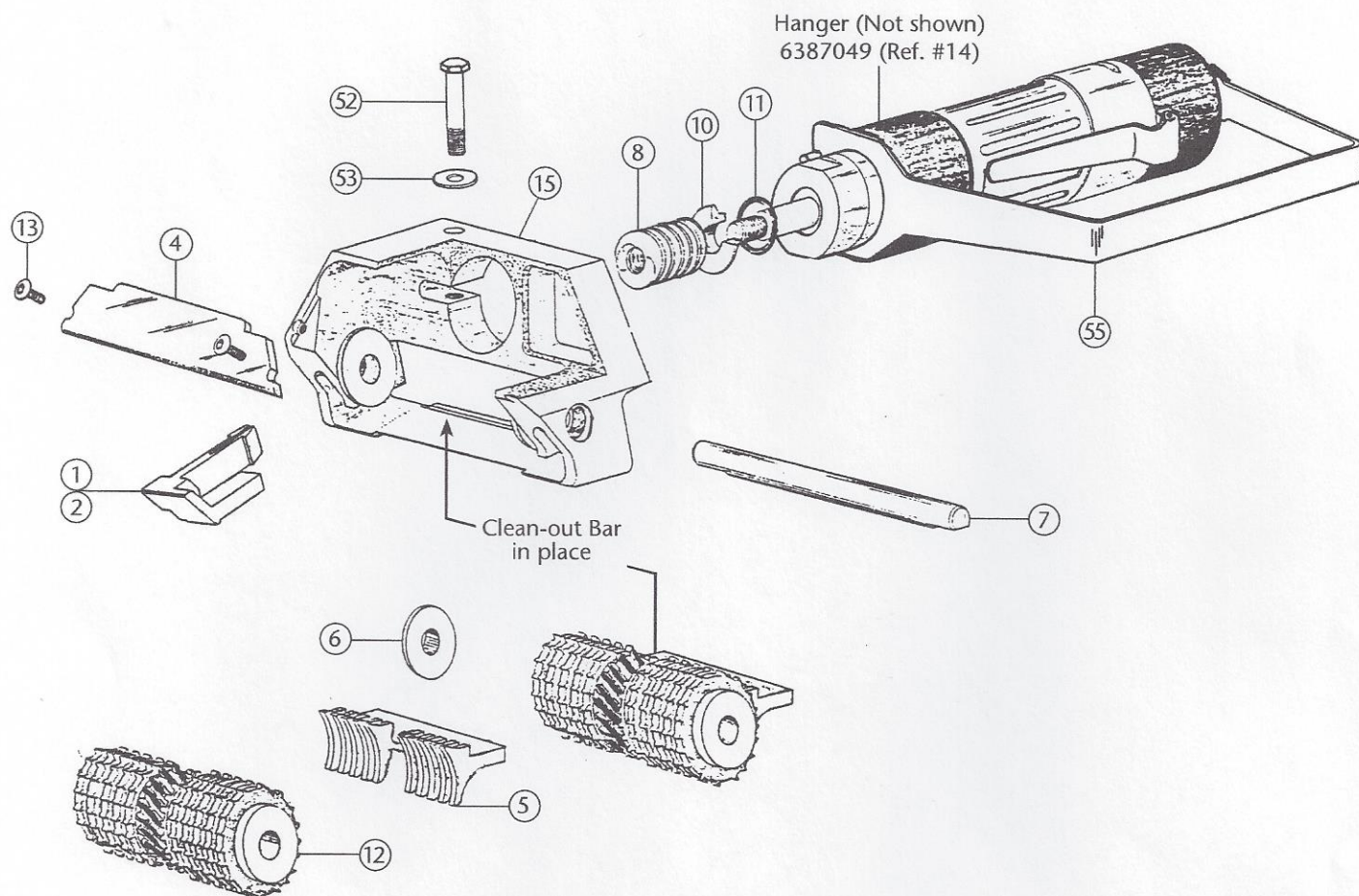
REF. No.	Part No.	DESCRIPTION
4	6387010	Housing Guard
5	6387177	Toothroll Clean-out Bar (13 Tooth - Standard)
	6387230	Toothroll Clean-out Bar (13 Tooth wrap around)
7	6387019	Toothroll Shaft - Standard
	6387187	Toothroll Shaft - 1/4" cut only
12	6387183	1/16" Wide Cut
	6387175	1/8" Wide Cut
	6387187	3/16" Wide Cut - Aggressive/Stainless Steel Gear
	6387220	3/16" Wide Cut - Aggressive/Delrin Gear
	638199	1/4" Wide Cut - Aggressive Gear
15	6387100	Toothroll Housing - Standard
	6387185	Toothroll Housing - 1/4" cut only

NEW STYLE – Without Center Clean-Out Tooth

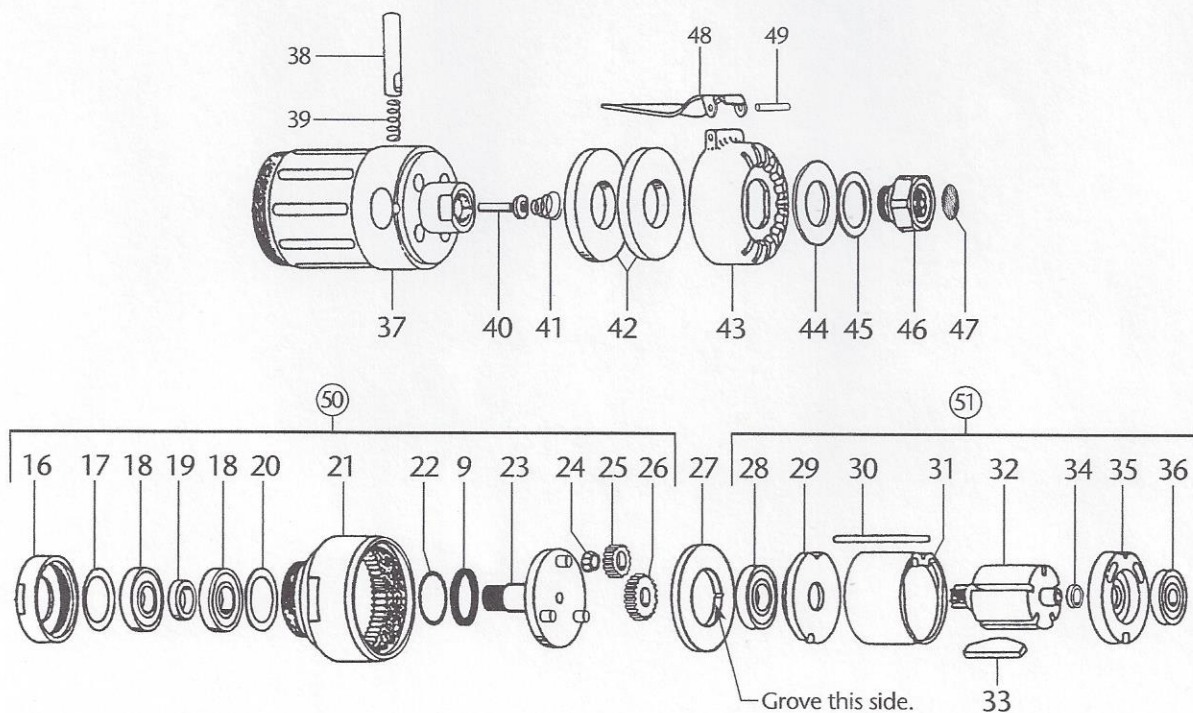


REF. No.	Part No.	DESCRIPTION
4	6387010	Housing Guard
5	6387071	Toothroll Clean-out Bar
7	6387019	Toothroll Shaft - Standard
12	6387077	1/16" Wide Cut
	6387075	1/8" Wide Cut
	6387072	3/16" Wide Cut - Aggressive/Delrin Gear
15	6387100	Toothroll Housing - Standard

PARTS LIST FOR SKINNER S-1011 HOUSING DIAGRAM



S-1011 & S-1011R SKINNER MOTOR DIAGRAM

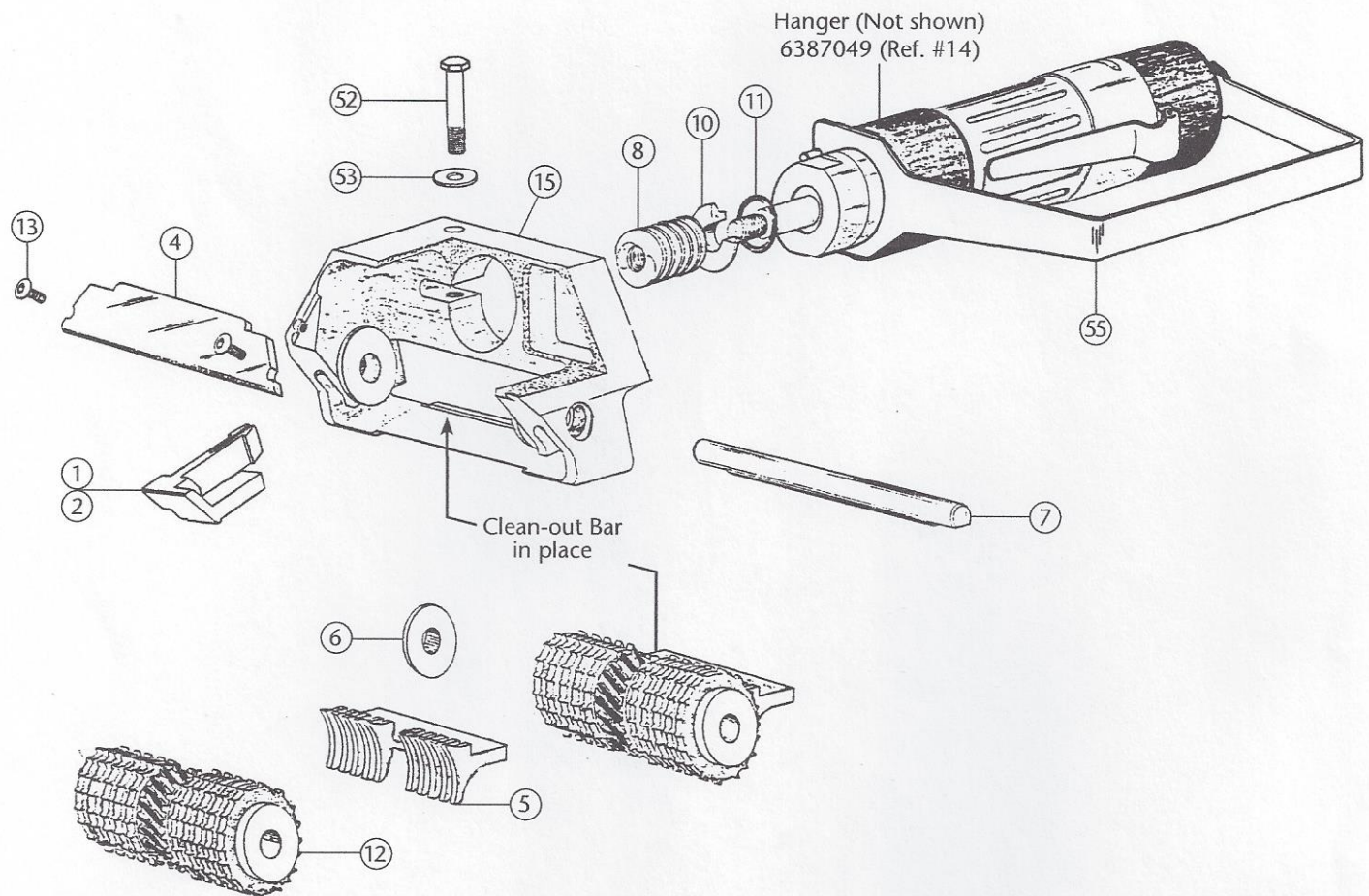


PARTS LIST FOR SKINNER S-1011 HOUSING DIAGRAM

PARTS LIST FOR SKINNER S-1011 & S-1011 MOTOR DIAGRAM

REF. No.	Part No.	Description	Quantity if more than 1	Ref. No.	Part No.	Description	Quantity if more than 1
1	6387002	Blade & Shaft Retainer - Right Hand		27	6387123	Spacer	
2	6387003	Blade & Shaft Retainer - Left Hand		28	6387125	Ball Bearing	
3	6387295	Blade Pack - Stainless Steel	100	29	6387127	Front End Plate	
	6387290	Blade Pack - Carbon Steel	100	30	6387129	Locating Pin	
4	6387010	Housing Guard		31	6387131	Cylinder	
5		Toothroll Clean-out, See Reference Page 9		32	6387133	Rotor	
6	6387016	Toothroll Bushing	2	33	6387135	Rotor Blades	5
7	6387019	Toothroll Shaft - Standard 1/16", 1/8" & 3/16"		34	6387137	Spacer	
	6387187	Toothroll Shaft - 1/4" Cut (only)		35	6387139	Rear End Plate	
8	6387022	Worm Gear - Standard		36	6387141	Ball Bearing	
9	6387025	Rear Seal (for Spindle Shaft only)		37	6387143	Head & Bushing Assembly	
10	6387028	Front Seal		38	6387145	Throttle Pin	
11	6387027	Front Seal O-Ring		39	6387147	Throttle Spring	
12		Toothroll Gear, - See Reference Page 9		40	6387149	Valve Rod Assembly	
13	9801026	Screws	2	41	6387151	Spring	
14	6387049	Hanger		42	6387153	Filter	2
15	6387100	Toothroll Housing (only) - 1/16", 1/8" & 3/16"		43	6387155	Exhaust Cap	
	6387185	Toothroll Housing (only) - 1/4" cut		44	6387157	Diffuser Washer	
16	6384101	Locknut Bearing Cap		45	6387159	Spacer	
17	6387103	Spring Washer		46	6387161	Inlet Adapter	
18	6387105	Ball Bearing	2	47	6387163	Screen	
19	6387107	Spacer - Inner Race		48	6387165	Lever	
20	6387109	Spacing Washer (under Bearings)		49	6387167	Roll pin	
21	6387111	Ring Gear - 51 Tooth		50	6387169	Gearing Assembly	
22	6387113	O-Ring		51	6387171	Air Motor Assembly	
23	6387115	Spindle Assembly		52	9801414	Hex Head Screw	
24	6387117	Needle Bearing	3	53	9801986	Washer SST 1/4"	
25	6387119	Planetary Gear - 15 Tooth	3	55	6387293	Trigger Guard	
26	6387121	Sun Gear - 21 Tooth		N/S	6389078	Male Quick Disconnect	
				N/S	6389075	Female Quick Dusconnect	
					6389055	Air Motor Assembly Complete (Includes #16 - #47	
					6387043	Toothroll Repair (Repair of Delrin only)	

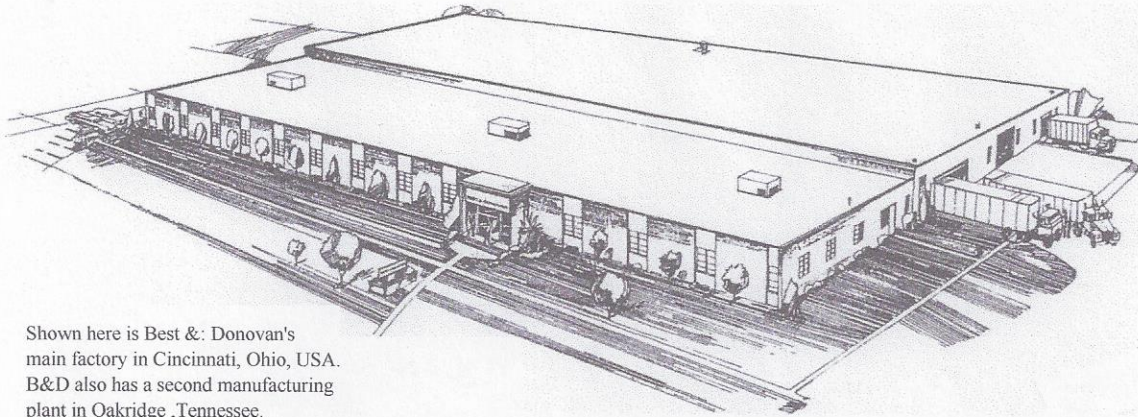
S-1011R SKINNER HOUSING DIAGRAM



PARTS LIST FOR SKINNER S-1011R HOUSING DIAGRAM

REF. No.	Part No.	Description	Quantity if more than 1	Ref. No.	Part No.	Description	Quantity if more than 1
1	6387002	Blade & Shaft Retainer - Right Hand		12	6387372	Toothroll Assy 1/16" Cut w/o Slot HD	
2	6387003	Blade & Shaft Retainer - Left Hand			6387374	Toothroll Assy 1/8" Cut w/Slot HD	
3	6387295	Blade Pack - Stainless Steel	100		6387375	Toothroll Assy 3/16" Cut w/Slot HD	
	6387290	Blade Pack - Carbon Steel	100		6387376	Toothroll Assy 1/16" Cut w/Slot HD	
4	6387323	Housing Guard		13	9801026	Screws	2
5		Tooth Clean-out, - See Reference Page 9	6	14	6387049	Hanger	
	6387016	Toothroll Bushing	2	15	6387321	Toothroll Housing (only) - 1/16", 1/8" & 3/16"	
7	6387019	Toothroll Shaft - Standard 1/16", 1/8" & 3/16"			6387185	Toothroll Housing (only) - 1/4" cut	
	6387187	Toothroll Shaft - 1/4" Cut (only)		50	6387169	Gearing Assembly	
8	6387324	Worm Gear - Standard		51	6387171	Air Motor Assembly	
10	6387028	Front Seal		52	9801414	Hex Head Screw	
11	6387027	Front Seal O-Ring		53	9801986	Washer SST 1/4"	
12	6387370	Toothroll Assy 1/8" Cut w/o Slot HD		55	6387393	Trigger Guard	
	6387371	Toothroll Assy 3/16" Cut w/o Slot HD		N/S	6389078	Male Quick Disconnect	
				N/S	6389075	Female Quick Disconnect	
					6389055	Air Motor Assembly Complete (Includes #16 - #47)	
					6387043	Toothroll Repair (Repair of Delrin only)	

BEST & DONOVAN



Shown here is Best & Donovan's main factory in Cincinnati, Ohio, USA. B&D also has a second manufacturing plant in Oakridge, Tennessee.

WARRANTY

Best & Donovan warrants this machine against defective parts and workmanship for (30) days from the date of factory shipment. In the fulfillment of its warranty, the sole of Seller shall be to repair or replace, at its option F.O.B. its factory, shipping charges prepaid, and which after inspection by Seller are found to be defective. Buyer shall notify Seller of defect in writing, promptly upon discovery, within the warranty period. This warranty does not cover defects caused by corrosion or normal deterioration. It does not extend to consequential damages, loss or delay associated with a warranty defect and it does not cover any costs of labor, travel or other expenses associated with the repair or replacement of defective parts. Seller assumes no liability for product loss or other claims whatsoever arising out of the use or application of the machine in Meat Slaughtering/Processing operations, whether the machine is used alone or in conjoint use with other Meat Slaughtering/Processing machines or Process.

This warranty is voided if repairs, replacements or alterations are made by others without prior authorization by Seller. Notwithstanding the foregoing, Seller warranty obligations with respect to any items not manufactured by Seller shall not exceed the obligations undertaken by the manufacturer thereof under express warranty to the Seller. This express warranty is in lieu of all other warranties of fitness of the machine for any particular purpose.

NOTICE ON WARRANTY WORK

Any warranty work that is to be considered by Best & Donovan on the "S-I 011 or S-I 011 R" Hand Held Skinner will be done by a service representative of Best & Donovan at the place of use or the entire "S-I 011 or S-I 011 R" Skinner in question must be sent to Best & Donovan for evaluation and consideration for warranty.

Use only Genuine Best & Donovan replacement parts for the repair of the "S-I 011 or S-I 011 R" Skinner. Any other parts used may void the warranty.

Parts not manufactured by Best & Donovan and used for the repair of the "S-I 011 or S-I 011 R" Skinner can cause power loss. A performance decrease and shorter life of the tool can be expected. Check to make sure the correct parts are being used.



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