



Hand-Held Scarifiers



Needleguns



Walk-Behind Scarifiers



Impact Tools



Sanders



Specialty Tools



Industrial Vacuums



2" & 3" Die Grinder *Pneumatic*



Configurations

Part	Description	Backup Pad Size	Shroud Type
141.001	Die grinder motor, bare	None	None
141.001.2	Die grinder, w/backup pad	2"	None
141.001.3	Die-grinder, w/backup pad	3"	None
141.2192	Die grinder	2"	Fixed
141.2172	Die grinder kit	2"	Fixed
141.2162	Die grinder system	2"	Fixed
141.2193	Die grinder	3"	Fixed
141.2173	Die grinder kit	3"	Fixed
141.2163	Die grinder system	3"	Fixed
140.219	Die grinder	3"	Floating*
140.2196	Die grinder system	3"	Floating*
180.192	Extended reach die grinder	None	None
180.2192	Extended reach die grinder	2"	Fixed
180.2193	Extended reach die grinder	3"	Fixed

*BPH abrasive *not recommended* for use with floating shroud.

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Introduction

The Desco 2" and 3" grinder is a quality power tool available with highly effective dust collection. The tool is lightweight and affords the user maximum ease and efficiency in a variety of applications. As with any product of a quality manufacture, service life largely depends on correct handling. These instructions are prepared to help you obtain maximum safety and performance at all times.

Main Applications

- De-slugging welds
- Stripping paint
- Cleaning castings
- Removing rust & corrosion
- Feathering Edges

Technical Specifications

Air required	90 psi @ 14 cfm
Weight	1.25 lbs
Length	6"
Speed, no load	12,000 rpm
Collette size	1/4"

Important Safety Information

Read and understand all of the safety precautions, warnings and operating instructions in the instruction manual before operating or maintaining this power tool.

Most accidents that result from power tool operation and maintenance are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing a potentially hazardous situation before it occurs, and by observing appropriate safety procedures

Basic safety precautions are outlined in the Safety section of this instruction manual and in the section which contain the operation and maintenance instructions.

Hazards that must be avoided to prevent bodily injury or machine damage are identified by warnings on the power tool and in this instruction manual.

Basic Safety Rules



WARNING Read and understand all instructions

Failure to follow all instructions listed below may result in damage to the tool and/or serious personal injury.

Work Area

1. **Keep work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres**, such as in the presence of flammable liquids, gasses, or dust. Power tools create sparks which may ignite dust or fumes.
3. **Keep bystanders away** while operating a power tool.

Personal Safety

1. **Stay alert**, watch what you are doing and use common sense when operating a power tool. Do not operate tool when tired or substance impaired.
2. **Dress properly.** Do not wear loose clothing or jewelry. Contain long hair. Keep hair, clothing and hands away from moving parts.
3. **Use safety equipment.** Always wear eye protection. Other precautions may be required depending on the situation. These include: ear protection (ear plugs) vibration protection (gloves), steel toe shoes or hard hats.
4. **Avoid accidental starting.** Be sure the switch is off before attaching to power source.
5. **Do not overreach.** Keep proper footing and balance at all times.

Tool Use and Care

1. **Secure the work.** Use clamps or other securing method to firmly hold work to a stable platform. Do not attempt to hold work in one hand and operate the tool with the other hand.
2. **Do not force tool.** Apply light hold down pressure and let the tool do the work. Use the correct tool for your application.
3. **Do not tape trigger closed** to fashion a trigger lock. If you drop or otherwise lose control of the tool, it will continue to run and may cause dangerous results.
4. **Disconnect from power source before making adjustments** or changing accessories. Failure to disconnect may result in injury if the tool were to accidentally start while adjusting.
5. **Store tools out of reach of untrained persons.** Tools are dangerous in the hands of untrained users.
6. **Maintain tools with care.** Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. **Check for misaligned or binding of moving parts**, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

Operation

Prior to Operation

- 1) **Check your work environment** – Ensure the following before operation:
 - No flammable gas or liquid at worksite.
 - Work piece secured to prevent unwanted movement
 - Area cleared of children or unauthorized personnel.
- 2) **Observe abrasive speed rating** – Use only abrasives rated to run at 12,000 rpm or greater.
- 3) **Check air supply**
 - *Air Pressure and Volume* – 80-90 PSI air pressure at a minimum of 14 CFM is recommended for the most efficient performance. Air pressure that is too high will shorten the tool's life.
 - *Dry and Clean Air* – For proper performance and tool life, it's critical to provide clean, dry air to tool. If moisture is present, utilize filter/dryer at air station or between compressor and air hook-up.
 - *Air Hose and Fittings* – Insure hoses and fittings are in good condition with no leaks in fittings or hose. Due to CFM drop with increased hose length, 1/2" or 3/4" hoses are recommended whenever exceeding 50 feet in length. Larger 1/2" body fittings are also recommended as they allow more airflow and are less restrictive.

Grinder Operation

- 1) **Hold the grinder firmly with one hand.** Ordinarily, holding the tool with two hands is advised. However, the size and nature of this tool dictate using only one hand.
- 2) **Switch Operation** – To switch is operated by a throttle lever. Pull the lever to run and release the lever to stop. The lever is designed with a double safety lock-out feature to prevent accidental starting. To override the lock-out: 1) push forward, 2) then push down as indicated by arrows below.



- 3) **Use light grinding pressure** – There is no need to press hard when grinding. Usually the grinder's own weight is sufficient to allow the required light contact with the surface to be grinded. Let the tool do the work.



WARNING: Do not press the grinder forcibly against the surface to be ground. Heavy pressure can result in wheel breakage and serious injury. It can also damage the surface being ground or damage the grinder's motor.

- 4) **Use proper grinding angle and motion:**

- Grind only with the abrasive wheel at a very slight angle to the work surface.
- Movement direction of the grinder is not as important for the mini die grinder as it is for other grinders and sanders. However, a good practice is to move the grinder in a grid pattern so as to keep track of the surface area being worked. Periodically check results and repeat the grid if necessary, otherwise move to the next grid.

**Sharp Angle
(>15 deg)**



Incorrect

**Flat
(0 deg)**



Incorrect

**Slight Angle
(1-3 deg)**



Correct

Inspection and Preventative Maintenance Schedule

Routine inspection and lubrication can be done by a person with a mechanical ability but otherwise no special training. However, maintenance procedures which require tool **dis-assembly and re-assembly should be done only by a qualified pneumatic tool technician.**

Interval	Inspection	Maintenance Procedure
Daily	Lubrication	Always use factory in-line filter lubricator. Fill reservoir after each use or after 8 hours of operation with light machine oil or equal lubricating oil. Insert 3-4 drops of oil in tool air inlet before storing.
Daily	Guard Bolts and Fasteners	Make sure all bolts and fasteners are properly tightened.
Daily	Double Safety Lock-off Lever	Check the "ON/OFF" handle to make sure double lock-off lever is operating properly. Replace if broken.
Daily	Hoses	If leaks are discovered, hose should be replaced. If leaks are around fittings, hose may be repairable.
30 Days	Filter	Replace when cartridge is dirty or does not allow air to pass through freely.
30-60 Days	Air Motor: Cylinder	Examine ID of cylinder for rough circular grooves. If grooves are in excess of .005" deep, replace cylinder. Minor scoring and rust can be removed with a fly-bur tool.
30-60 Days	Rotor	Examine the spline or gear teeth at the driving end of the rotor. If they have become so worn that a step can be seen next to mating surfaces, the rotor should be replaced.
30-60 Days	Bevel Gears	Grease air motor bevel gears after every 250 hours of operation.
30-60 Days	Endplates	Examine both the front and rear endplates for wear. If the face shows wear greater than a depth .005", the endplates should be replaced.
30-60 Days	Bearings	Hold the inner race and rotate the outer race of the bearing by hand. If rough movement or substantial play are detected, replace bearing.
30-60 Days	Rotor Blades	Compare the width of an old rotor blade with the width of a new blade. If the old blades show 20% or more wear, they should be replaced.
30-60 Days	O-Rings	If o-rings become hard or cracked, they should be replaced. To prevent drying out, always coat O-rings with lubricant such as petroleum jelly before installation.

Installing Mandrels and Abrasives

Without Dust Collector or with Fixed Dust Collector

Install Mandrel

1. Lay tool on back on a suitable work surface.



2. Insert mandrel into collet. Insert spindle wrench to hold spindle in place.



3. Insert collet wrench. While holding spindle in place, turn collet clockwise to tighten.



4. To remove mandrel, reverse the above procedure.

Install Abrasive

1. Lay tool on back on a suitable work surface.



2. Insert spindle wrench to hold spindle in place.



3. Screw on ROLOC abrasive while holding spindle with wrench.



4. To remove abrasive, reverse the above procedure.

Floating Dust Collector

Install Mandrel and Dust Collector

1. Lay tool on back on a suitable work surface.



2. Insert mandrel into collet.



3. Insert spindle wrench to hold spindle in place.



4. Insert collet wrench. While holding spindle in place, turn collet clockwise to tighten.



5. Insert dust collector over motor head. Center front access window and secure by tightening 3 Allen set screws.



Install Abrasive

1. Lay tool on back on a suitable work surface.



2. Insert spindle wrench to hold spindle in place.



3. Screw on ROLOC abrasive while holding spindle with wrench.



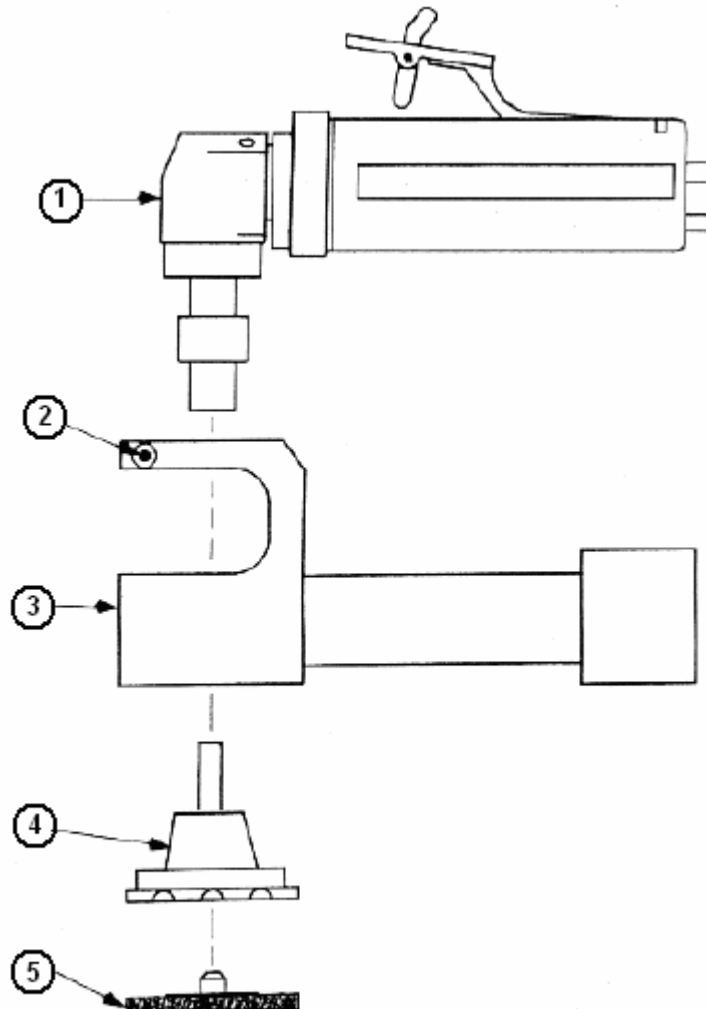
4. To remove abrasive, reverse the above procedure.

Tool Stowage

Avoid storing tools in locations subject to high humidity. If tool is stored in such environment over extended duration without proper lubrication, residual internal moisture will result in corrosion. After operation and before storing, always wipe down tool to make sure it is free of grease, dirt and grime. Immediately following, place 2 drops of oil in tool air inlet and run motor for 1 to 2 seconds to spread lubrication throughout motor.

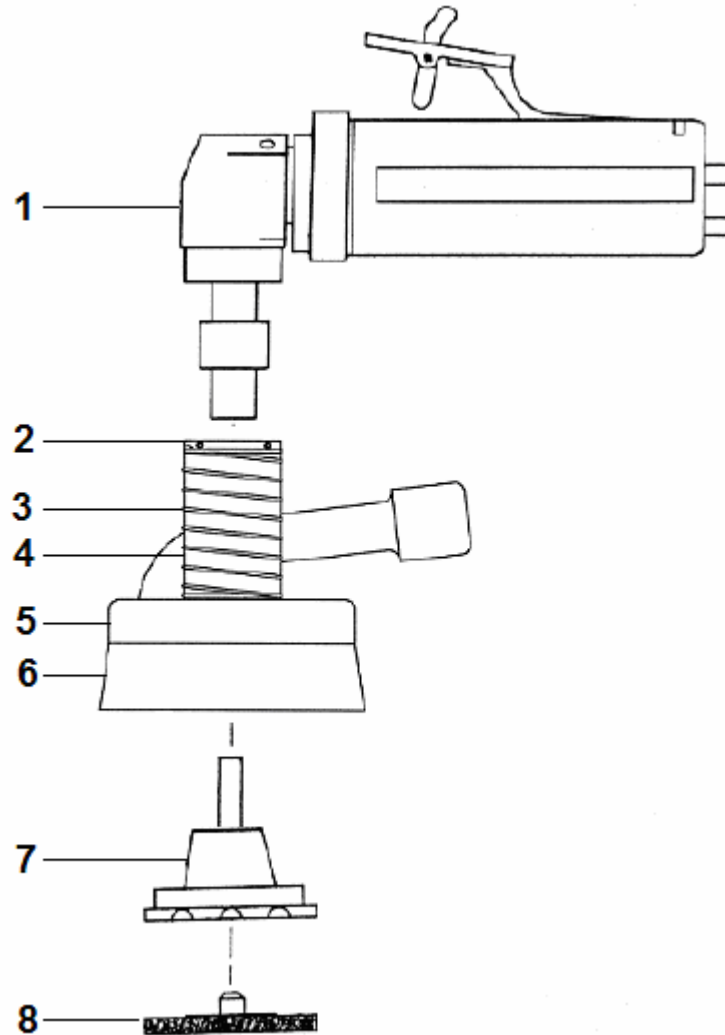
Schematics

2" and 3" Fixed-head Shroud



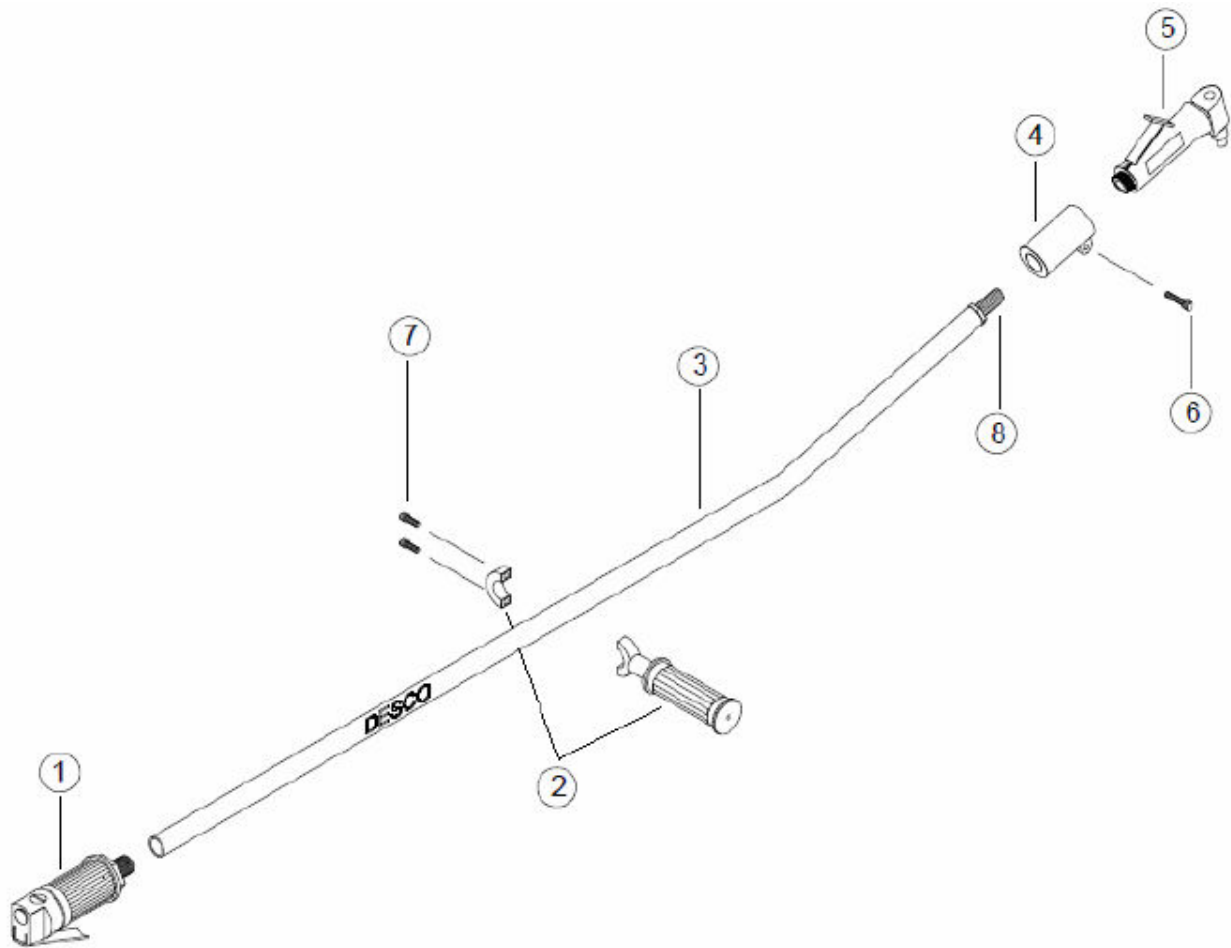
Ref	Part	Description
1	141.001	Right Angle Motor
2	750.135	Set Screw (2 req)
3	141.003	2" Dust Shroud
	141.004	3" Dust Shroud
4	825.1315	2" Backup pad, with Mandrel
	825.1318	3" Backup pad, with Mandrel
5	- - -	Consumable Product

3" Floating Shroud



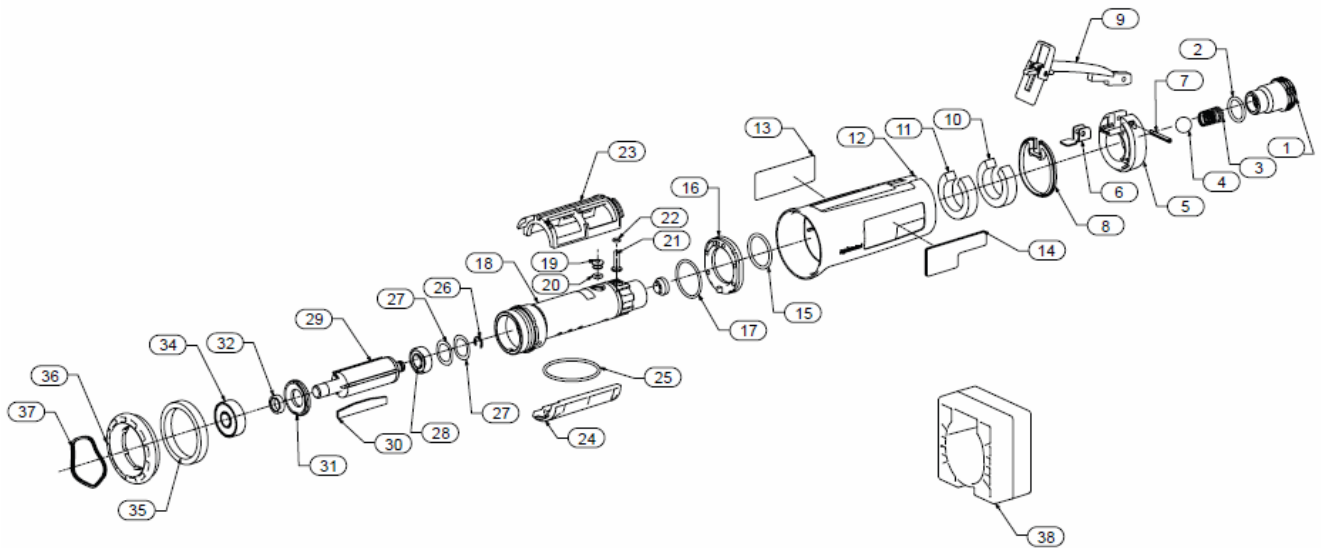
Ref	Part	Description
1	141.001	Right Angle Motor
2	750.135	Set Screw (3 req)
3	140.008	Spring
4	140.007	Cup adapter, floating shroud
5	140.010	Vacuum guard
6	140.009	Brush, strip style cup
7	825.1318	3" backup pad with mandrel
8	---	Consumable product

Extended Reach Assembly



Ref	Qty	Part	Description
1	1	180.150	Backhead assembly
2	1	141.018	Handle clamp assembly
3	1	180.154	Body tube, altered
4	1	141.020	Safety collar
5	1	141.001	Mini-die grinder
6	1	750.076	Screw, socket head, 1/4-20 x 1"
7	2	750.070	Screw, socket head, 10-32 x 1/2"
8	1	500.475	Nipple, 1/4" NPT

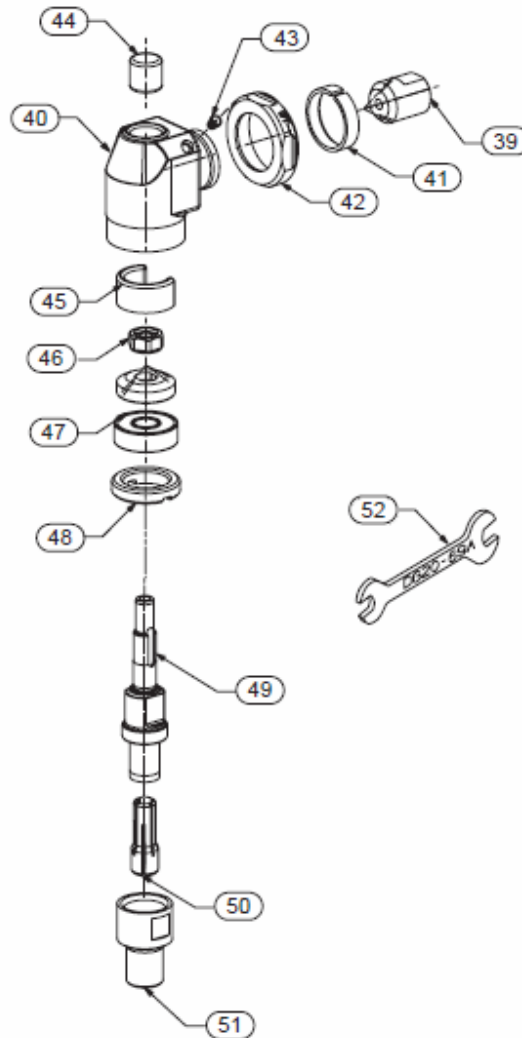
Air Motor – Breakdown 1 of 2



Ref	Part	Description
1	550.1465	Inlet Assembly
*	550.027	Inlet Screen
2	550.8019	Inlet Seal
3	550.3949	Ball Valve Spring
4	550.4280	Ball
5	550.1123	Rear Exhaust Diffuser
6	550.289.6	Lever Support
7	550.039	Throttle Lever Pin
8	550.1223	Rear Exhaust Diffuser Gasket
9	550.1400	Lever Assembly
*	---	Lever
*	---	Lock Spring
*	---	Lock Pin
*	---	Lever Lock
10	550.1311.1	Rear Exhaust Diffuser Muffler
11	550.1311.2	Rear Housing Muffler
12	550.140.12	Motor Housing Assembly
13	----	Warning Label
14	---	Model Label
15	550.1203	Rear Cylinder O-Ring
16	550.1318	Exhaust Seal
17	550.8015	Front Cylinder O-Ring

Ref	Part	Description
18	550.1318.18	Cylinder Assembly
*	550.2781	Throttle Bushing
*	550.1303	Ball Valve Seat
19	550.134.19	Cylinder Plug Assembly
20	550.88015.20	Cylinder Plug O-Ring
21	550.1161	Throttle Pin Assembly
22	550.1657	Throttle Pin O-Ring
23	550.1200	Flow Guide
24	550.1144	Intake Cover Assembly
25	550.1822	Intake Cover O-Ring
26	550.011	Rear Rotor Bearing Retainer
27	550.028	Rear Rotor Bearing Spacer (2)
28	550.038	Rear Rotor Bearing
29	550.1535	Rotor
30	550.1425	Vane Pack
31	550.111.31	Front End Plate
32	550.007	Front End Plate Spacer
34	550.013	Front Rotor Bearing
35	550.1311.35	Front Muffler
36	550.1202	Front Housing Cap
37	550.017	Flange Clamp
38	550.1598	Clamp Tool

Air Motor – Breakdown 2 of 2



Ref	Part	Description
39	550.005	Bevel Pinion and Bevel Gear (sold only as a matched set)
40	550.004	Angle Housing Assembly
41	550.023	Clamp Spacer
42	550.016	Clamp Nut
43	550.001	Grease Fitting
44	550.035	Upper Arbor Bearing
45	550.025	Wick
46	550.034	Bevel Gear Nut
47	550.030	Lower Arbor Bearing
48	550.033	Arbor Bearing Cap
49	550.032	Arbor
50	550.009	Collet
51	550.037	Collet Nut
52	550.029.1	Collet Body/Arbor Wrench