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For Serial No. 9I1000 and Higher

Parts Page No. PD00•34R
Effective April, 2000
Supersedes PD94•51

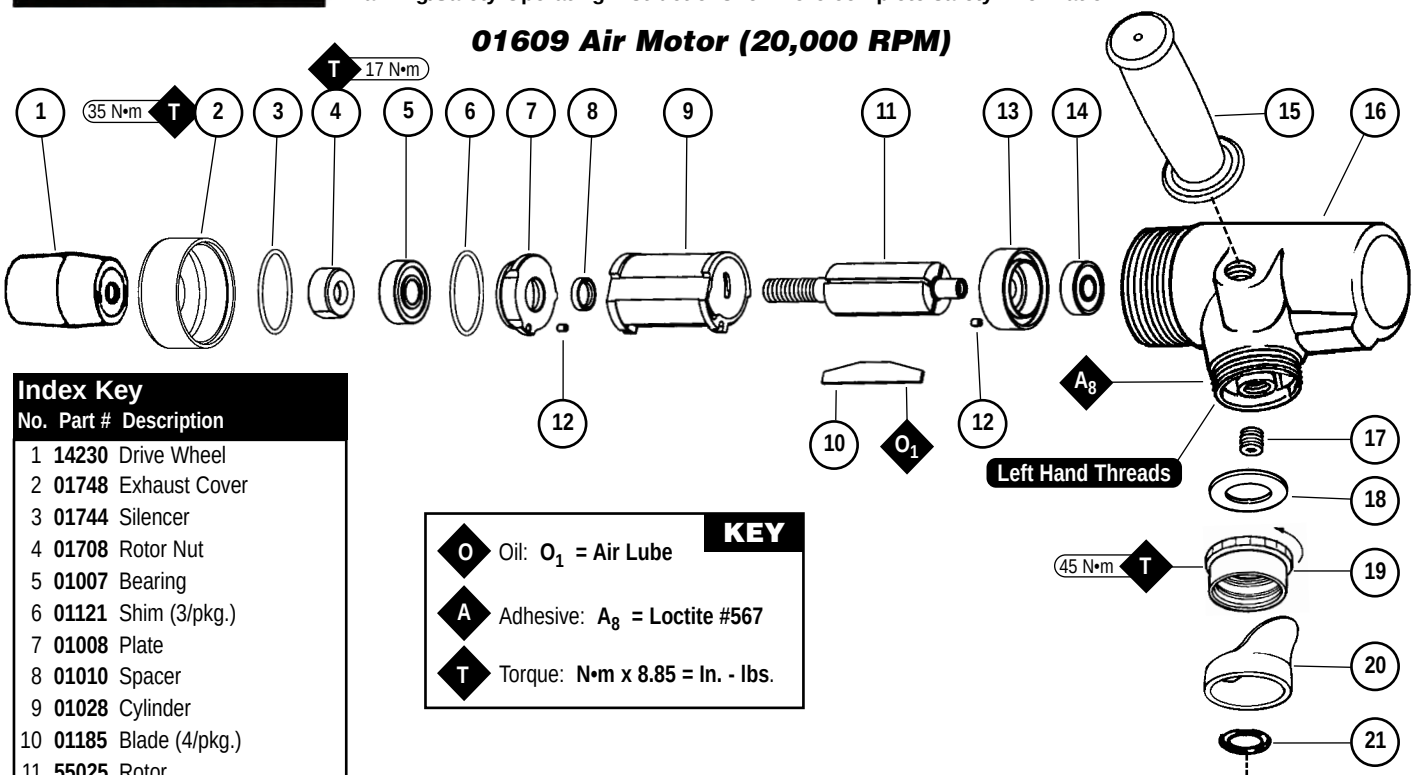
Dynangle®

Machine and Motor Parts

Models:
14200 – Standard Machine
14201 – Versatility Kit

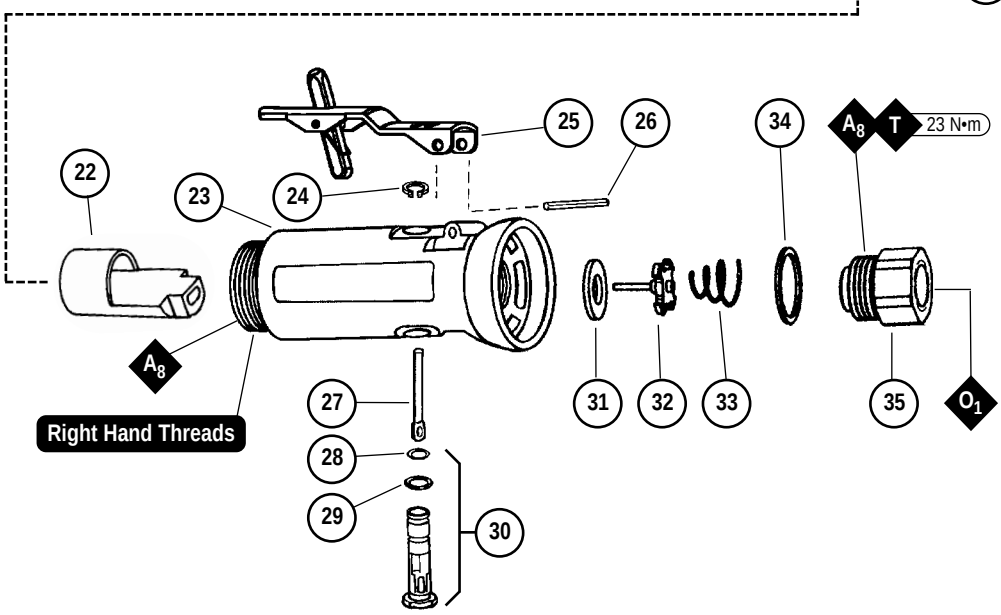
WARNING **Always operate, inspect and maintain this tool in accordance with the Safety Code for portable air tools (ANSI B186.1) and any other applicable safety codes and regulations. Please refer to Dynabrade's Warning/Safety Operating Instructions for more complete safety information.**

01609 Air Motor (20,000 RPM)



KEY

- O — Oil: O_1 = Air Lube
- A — Adhesive: A_8 = Loctite #567
- T — Torque: N•m x 8.85 = In. - lbs.



Index Key

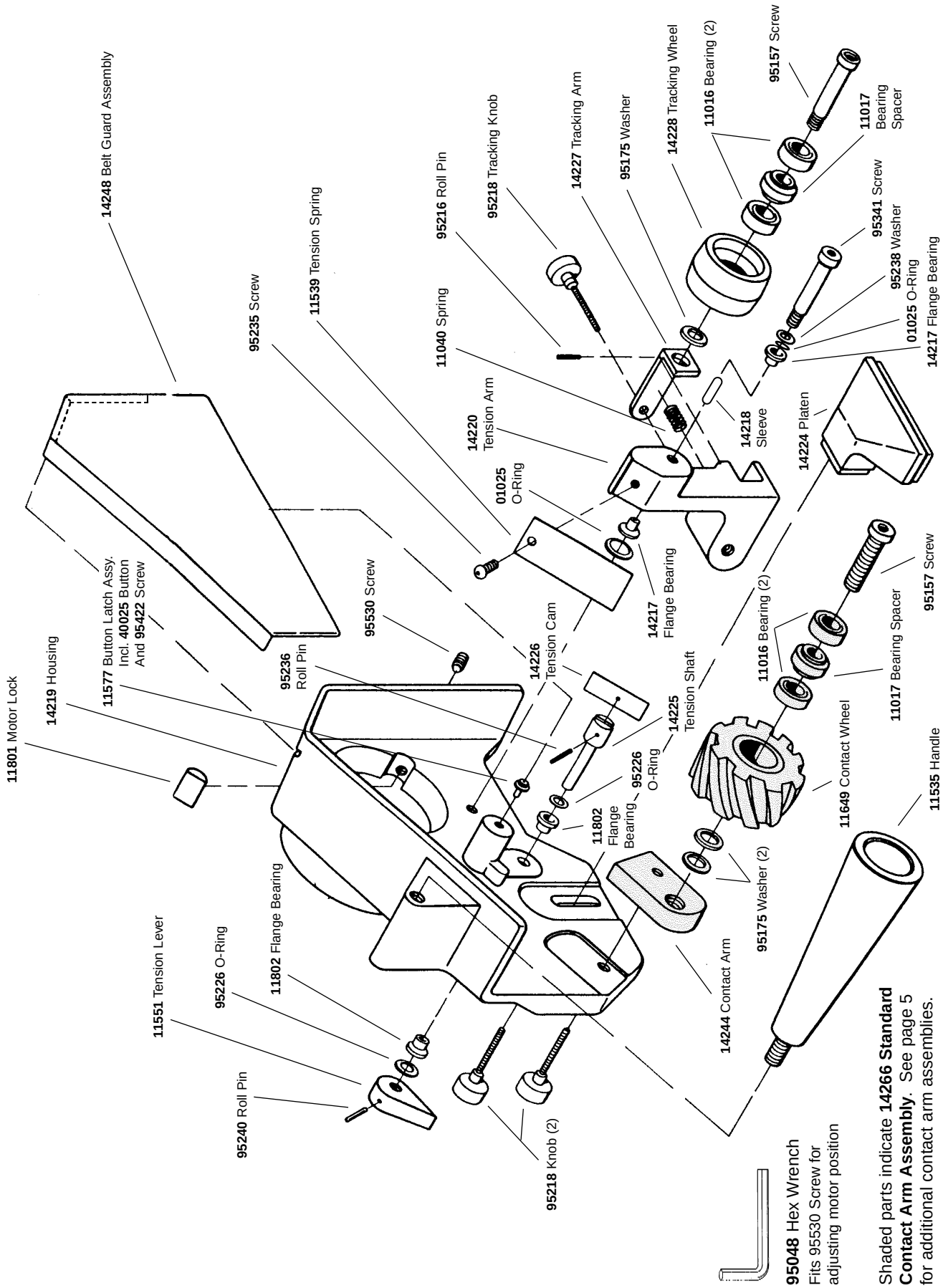
No.	Part #	Description
1	14230	Drive Wheel
2	01748	Exhaust Cover
3	01744	Silencer
4	01708	Rotor Nut
5	01007	Bearing
6	01121	Shim (3/pkg.)
7	01008	Plate
8	01010	Spacer
9	01028	Cylinder
10	01185	Blade (4/pkg.)
11	55025	Rotor
12	50767	Guide Pin (2)
13	01743	Bearing Plate
14	02649	Bearing
15	53163	Handle Assembly
16	01739	Motor Housing
17	01437	Plug
18	01548	Gasket
19	01461	Lock Nut
20	01558	Collar
21	95523	O-Ring
22	01470	Insert
23	01488	Housing
24	95558	Retaining Ring
25	01462	Safety Throttle Lever
26	12132	Pin
27	01449	Valve Stem
28	95730	O-Ring
29	01024	O-Ring
30	01469	Speed Reg. Assembly
31	01464	Seal
32	01472	Tip Valve
33	01468	Spring
34	01564	Spacer
35	01494	Inlet Bushing

See inside for Important Operating, Maintenance and Safety Instructions.

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Basic Machine Assembly



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Assembly/Disassembly for Dynangle

Important: Manufacturer's warranty is void if tool is disassembled before warranty expires.

Notice: Dynabrade strongly recommends the use of their **52296** Repair Collar (sold separately) during assembly/disassembly activities. Failure to use this collar will highly increase the risk of damage to the valve body of this tool. Please refer to parts breakdown for part identification.

Motor Disassembly:

Important: Do not over tighten vise or housing could be damaged.

1. Secure tool in a padded vise using **52296** Repair Collar or padded jaws.
2. Twist the drive wheel counterclockwise and remove. Using a wrench remove **01748** Exhaust Cover (twist counterclockwise). Remove silencers.
3. Pull motor assembly from housing. Fasten a bearing separator around the end of **01028** Cylinder nearest the **01743** Rear Bearing Plate.
4. Place the bearing separator on the table of the arbor press, so that the spindle end of the motor is pointing towards the floor.
5. Using a 3/16" diameter drive punch as a press tool, press the rear portion of the **55025** Rotor out of the **02649** Rear Bearing
6. Remove **01008** Front Bearing Plate, cylinder, blades (4), and **01010** Spacer from rotor. **Note: 01008** Front Bearing Plate, **01007** Front Bearing and **01010** Spacer are a slip fit onto rotor. Press **02649** Rear Bearing from **01743** Rear Bearing Plate.
7. With the motor now disassembled, secure the rotor body in a soft jaw vise. Remove the **01078** Rotor Nut.

Motor Disassembly Complete.

Valve Stem/Body Assembly:

1. Secure motor housing in padded vise using **52296** Repair Collar with air inlet bushing facing upwards.
2. Unscrew **01494** Inlet Bushing from valve body and remove **01564** Air Control Ring.
3. Using needle nose pliers, remove **01468** Spring and **01472** Tip Valve. Pick out **01464** Seal.
4. Using a 2.5 mm dia. drift pin, tap out **12132** Pin and remove throttle lever.
5. Remove **95558** Retaining Ring using retaining ring pliers.
6. Push **01469** Speed Regulator from housing.
7. Remove **01470** Insert Assembly and **95523** O-Ring.

To Assemble - Motor Assembly:

Important: Make sure parts are clean and in good condition before reassembling.

1. Place **55025** Rotor in padded vise with threaded spindle facing upwards. Slip **01010** Spacer onto rotor.
2. Place a .002" shim into **01008** Front Bearing Plate as an initial spacing and slip **01007** Bearing into plate. **Note:** shim pack contains .001" and .002" shims.
3. Install bearing/bearing plate assembly onto rotor. Tighten **01078** Rotor Nut onto rotor (torque to 17 N•m/150 in. - lbs.).
4. Check clearance between rotor and bearing plate by using a .001" feeler gauge. Clearance should be at .001" to .0015". Adjust clearance by repeating steps 1-4 with different shim if necessary.
5. Once proper rotor/gap clearance is achieved, install well lubricated **01185** Blades (4) into rotor slots. Dynabrade recommends their air lube P/N **95842**.
6. Install cylinder over rotor. Be sure air inlet holes of cylinder face away from bearing plate and that the **50767** Pin in the front bearing plate aligns correctly with the pin-hole in the cylinder.
7. Press **02694** Rear Bearing into **01743** Rear Bearing Plate. Press bearing/bearing plate assembly onto rotor. Be sure that pin and air inlet holes line-up with pin slot and air inlet holes in cylinder.
   Important: Fit must be snug between bearing plates and cylinder. A loose fit will not achieve the proper preload of motor bearings. If too tight, rotor will not turn freely and must then be lightly tapped at press fit end so it will turn freely while still maintaining a snug fit.
8. Secure housing in vise using **52296** Repair Cover or padded jaws so motor cavity faces upwards.
9. Install motor assembly into housing (be sure motor drops all the way in). Tighten **01748** Exhaust Cover onto motor housing (torque 34 N•m/300 in. - lbs.).
10. Motor adjustment must now be checked. With motor housing still mounted in vise, pull end of rotor and twist (10-15 lbs. force), rotor should turn freely without drag. If drag or rub is felt, then increase preload or remove shim. Also, push end of rotor and twist (10-15 lbs. force), rotor should turn freely without drag. If drag or rub is felt, then deload or add shim.
11. Tighten **14230** Drive Wheel onto rotor (torque 3.38 N•m/30 in. - lbs.).

Motor Assembly Complete.

Valve Stem/Body Assembly:

1. Install **95523** O-Ring onto **01470** Insert Assembly.
2. Install **01470** Assembly into valve body housing.
3. Insert **01469** Speed Regulator Assembly into valve body housing. Secure with **95558** Retaining Ring.
4. Secure valve body assembly in padded vise using **52296** Repair Collar with air inlet facing upward and throttle lever accessible.
5. Insert **01464** Seal into housing.
6. Line up the hole in **01449** Valve Stem with the hole in the housing (looking past brass bushing). Using needle nose pliers, insert **01472** Tip Valve so that the metal pin passes through the hole in the **01449** Valve Stem.
7. Install **01468** Spring (small end first) over tip valve.
8. Install **01564** Air Control Ring, onto **01494** Inlet Bushing.
9. Apply small amount of #567 Loctite® (or equivalent) to threads of **01494** Inlet Bushing and install into valve body. (Torque 23.0 N•m/200 in. lbs.).
10. Install **01462** Throttle Lever and **12132** Pin. Remove valve body assembly from vise.

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Important Operating, Maintenance and Safety Instructions

Carefully read all instructions before operating or servicing any Dynabrade® Abrasive Power Tool.
Warning: Hand, wrist and arm injury may result from repetitive work motion and overexposure to vibration.
Important: All Dynabrade air tools must be used with a Filter-Regulator-Lubricator to maintain all warranties.

Operating Instructions:

Warning: Eye, face, respiratory, sound, and body protection must be worn while operating power tools. Failure to do so may result in serious injury or death. Follow safety procedures posted in workplace.

1. With power source disconnected from tool, securely position abrasive belt on tool (see abrasive belt/contact arm change instructions).
2. Connect power source to tool. Be careful **not** to depress throttle lever in the process.
3. Check tool speed with tachometer. If tool is operating at a higher speed than the RPM marked on the tool or operating improperly, the tool should be serviced to correct the cause before use.
4. Always work off the return side of the abrasive belt. This will ensure superior tracking and less down time of machine.

Abrasive Belt/Contact Arm Change Instructions:

To Change Belt:

1. Disconnect power source.
2. Remove **14248** Cover Guard.
3. Release **11551** Belt Tension Lever.
4. Pull belt backwards and to the left until belt is released from drive wheel.
5. Reverse process for applying new belt.
6. Connect power source.
7. Depress throttle lever to start motor and belt rotation.
8. Adjust belt tracking by turning **95218** Belt Tracking Knob to the left or right accordingly.

To Change Contact Wheel Assembly:

1. Disconnect power source.
2. Remove **14248** Cover Guard.
3. Remove abrasive belt (see instructions).
4. Remove **95218** Knob holding contact arm assembly.
5. Remove contact arm and replace with desired contact arm.
6. Replace **95218** Knob.
7. Replace abrasive belt.
8. Replace **14248** Cover Guard.
9. Reset **11551** Belt Tension Lever.
10. Connect power source and depress throttle lever to start motor and abrasive belt rotation.
11. Adjust belt tracking by turning **95218** Belt Tracking Knob to the left or right accordingly.

Motor Angle Adjustment:

To pivot motor, loosen **95530** Set Screw (located above **95218** Tracking Knob) with supplied **95048** 1/8" wrench. Pivot motor to desired position and retighten set screw.

Maintenance Instructions:

1. All Dynabrade air motors should be lubricated. Dynabrade recommends one drop of air lube per minute for each 10 SCFM (example: if the tool specification states 40 SCFM, set the drip rate of your filter-lubricator at 4 drops per minute).
   Dynabrade Air Lube (P/N **95842**: 1pt. 473ml.) is recommended.
2. An Air Line Filter-Regulator-Lubricator must be used with this air tool to maintain all warranties. Dynabrade recommends the following: **11405** Air Line Filter-Regulator-Lubricator — Provides accurate air pressure regulation, two-stage filtration of water contaminants and micro-mist lubrication of pneumatic components. Operates 40 SCFM @ 100 PSIG has 3/8" NPT female ports.
3. Frequent drainage of water traps in air lines is recommended.
4. Some silencers on air tools may clog with use. Clean and replace as required.
5. A Motor Tune-Up kit (P/N **96233**) is available which includes assorted parts to help maintain motor in peek operating condition.

Safety Instructions:

Products offered by Dynabrade should not be converted or otherwise altered from original design without expressed written consent from Dynabrade, Inc.



- **Warning:** Eye, face, respiratory, sound, and body protection must be worn while operating power tools. Failure to do so may result in serious injury or death. Follow safety procedures posted in workplace.
- **Important:** User of tool is responsible for following accepted safety codes such as those published by the American National Standards Institute (ANSI).
- Tool RPM must never exceed abrasive/accessory RPM rating, regardless of tool capacity.
- Operate machine for 30 seconds before application to workpiece to determine if machine is working properly and safely before work begins.
- Always use proper guards. Make sure guards are in proper position, secure and in good repair.
- Always disconnect power supply before changing abrasive/accessory or making machine adjustments.
- Inspect abrasives/accessories for damage or defects prior to installation on tools.
- Please refer to Dynabrade's Warning/Safety Operating Instructions Tag (Reorder No. **95903**) for more complete safety information.
- **Warning:** Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration.

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Dynangle® Contact Arms

Use 1" W x 18" L Coated Abrasives and Abrasive Impregnated Non-Woven Nylon Belts.



14261



14262



14263



14264



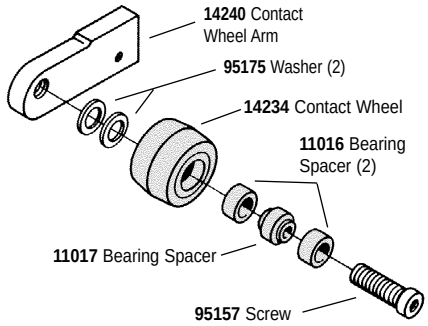
14265



14266

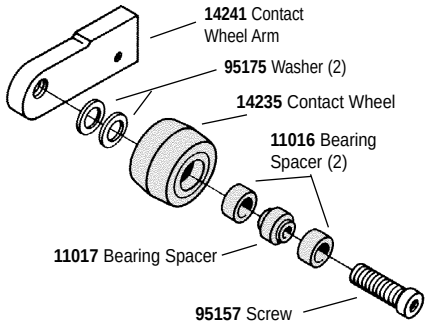
Part No.	Description	Use
14261	1" Dia. x 1" W, Smooth Urethane, 70 Duro	1/2" Radiused Corner
14262	1-1/4" Dia. x 1" W, Smooth Urethane, 70 Duro	5/8" Radiused Corner
14263	1-1/2" Dia. x 1" W, Smooth Urethane, 70 Duro	3/4" Radiused Corner
14264	1-3/4" Dia. x 1" W, Smooth Urethane, 70 Duro	7/8" Radiused Corner
14265	2" Dia. x 1" W, Smooth Urethane, 70 Duro	1" Radiused Corner
14266	2" Dia. x 1" W, Standard Serrated, 70 Duro	1" Radiused Corner

14261



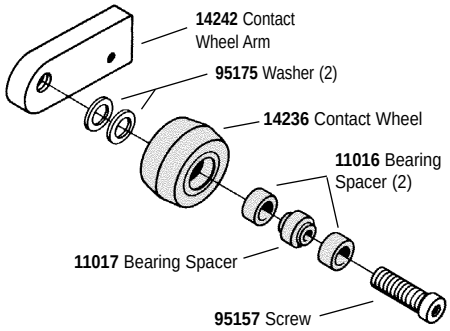
Shaded parts indicate **14251 Contact Wheel Assembly.**

14262



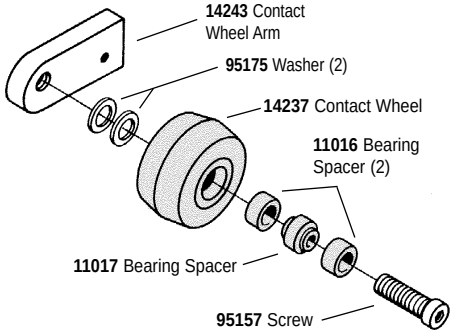
Shaded parts indicate **14252 Contact Wheel Assembly.**

14263



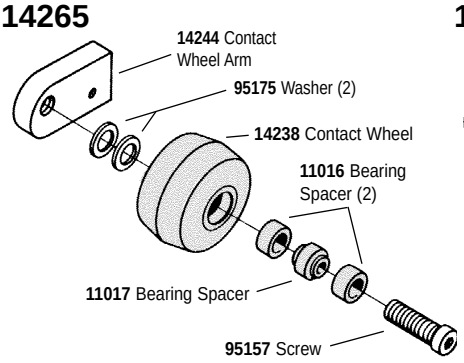
Shaded parts indicate **14253 Contact Wheel Assembly.**

14264



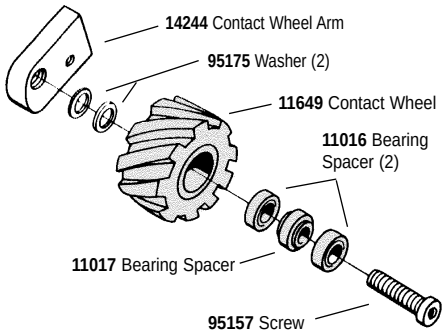
Shaded parts indicate **14254 Contact Wheel Assembly.**

14265



Shaded parts indicate **14255 Contact Wheel Assembly.**

14266 (Standard on Dynangle®)



Shaded parts indicate **14256 Contact Wheel Assembly.**

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