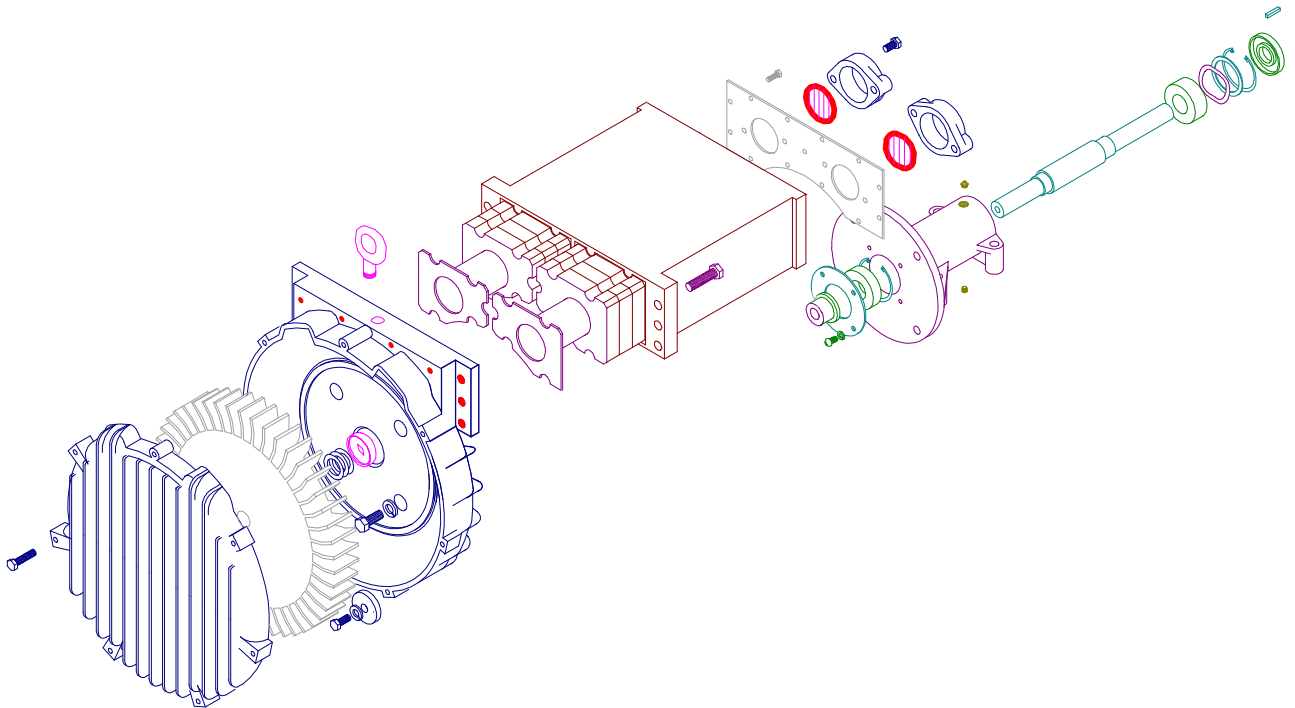


SERVICE AND PARTS MANUAL FOR BLOWER MODEL

**DR909RDNT, DR14RDNT, DR14RDM,
DR623RD, DR823RD, DR1223RD**

REMOTE DRIVE REGENERATIVE BLOWER



AMETEK Dynamic Fluid Solutions
100 East Erie St., Kent, Ohio 44240
Telephone: 330-673-3452 Fax: 330-677-3306
email: dfs.information@ametek.com
internet: www.ametekdfs.com

AMETEK

Your Choice. Our Commitment.™

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WARRANTY, INSTALLATION, MAINTENANCE AND TROUBLESHOOTING INSTRUCTIONS



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1. AMETEK Rotron DR, EN and HiE regenerative direct drive blowers are guaranteed for one full year from the date of installation (limited to 18 months from the date of shipment) to the original purchaser only. Should the blower fail we will evaluate the failure. If failure is determined to be workmanship or material defect related, we will at our option repair or replace the blower.
2. AMETEK Rotron Minispiral, Revaflow, Multiflow, Nautilair, remote drive blowers, moisture separators, packaged units, CP blowers, Nasty Gas™ models and special built (EO) products are guaranteed for one full year from date of shipment for workmanship and material defect to the original purchaser only. Should the blower fail, If failure is determined to be workmanship or material defect related, we will at our option repair or replace the blower.
3. **Parts Policy** - AMETEK Rotron spare parts and accessories are guaranteed for three months from date of shipment for workmanship and material defect to the original purchaser only. If failure is determined to be workmanship or material defect related we will at our option repair or replace the part.

Corrective Action - A written report will be provided indicating reason(s) for failure, with suggestions for corrective action. Subsequent customer failures due to abuse, misuse, misapplication or repeat offense will not be covered. AMETEK Rotron will then notify you of your options. Any failed unit that is tampered with by attempting repair or diagnosis will void the warranty, unless authorized by the factory.

Terms and Conditions - Our warranty covers repairs or replacement of regenerative blowers only, and will not cover labor for installation, outbound and inbound shipping costs, accessories or other items not considered integral blower parts. Charges may be incurred on products returned for reasons other than failures covered by their appropriate warranty. Out-of-warranty product and in warranty product returned for failures determined to be caused by abuse, misuse, or repeat offense will be subject to an evaluation charge. Maximum liability will in no case exceed the value of the product purchased. Damage resulting from mishandling during shipment is not covered by this warranty. It is the responsibility of the purchaser to file claims with the carrier. Other terms and conditions of sale are stated on the back of the order acknowledgement.

Installation Instructions for SL, DR, EN, CP, and HiE Series Blowers

1. **Bolt It Down** - Any blower must be secured against movement prior to starting or testing to prevent injury or damage. The blower does not vibrate much more than a standard electric motor.
2. **Filtration** - All blowers should be filtered prior to starting. Care must be taken so that no foreign material enters the blower. If foreign material does enter the blower, it could cause internal damage or may exit at extremely high velocity.

Should excessive amounts of material pass through the blower, it is suggested that the cover(s) and impeller(s) be removed periodically and cleaned to avoid impeller imbalance. Impeller

imbalance greatly speeds bearing wear, thus reducing blower life. Disassembling the blower will void warranty, so contact the factory for cleaning authorization.

- Support the Piping** - The blower flanges and nozzles are designed as connection points only and are not designed to be support members.

Caution: Plastic piping should not be used on blowers larger than 1 HP that are operating near their maximum pressure or suction point. Blower housing and nearby piping temperatures can exceed 200°F. Access by personnel to the blower or nearby piping should be limited, guarded, or marked, to prevent danger of burns.

- Wiring** - Blowlers must be wired and protected/fused in accordance with local and national electrical codes. All blowlers must be grounded to prevent electrical shock. Slo-Blo or time delay fuses should be used to bypass the first second of start-up amperage.
- Pressure/Suction Maximums** - The maximum pressure and/or suction listed on the model label should not be exceeded. This can be monitored by means of a pressure or suction gage (available from Rotron), installed in the piping at the blower outlet or inlet. Also, if problems do arise, the Rotron Field representative will need to know the operating pressure/suction to properly diagnose the problem.
- Excess Air** - Bleed excess air off. DO NOT throttle to reduce flow. When bleeding off excess air, the blower draws less power and runs cooler.

Note: Remote Drive (Motorless) Blowlers - Properly designed and installed guards should be used on all belts, pulleys, couplings, etc. Observe maximum remote drive speed allowable. Due to the range of uses, drive guards are the responsibility of the customer or user. Belts should be tensioned using belt gauge.

Maintenance Procedure

When properly piped, filtered, and applied, little or no routine maintenance is required. Keep the filter clean. Also, all standard models in the DR, EN, CP, and HiE series have sealed bearings that require no maintenance. Bearing should be changed after 15,000 to 20,000 hours, on average. Replacement bearing information is specified on the chart below.

Bearing Part Number	Size	Seal Material	Grease	Heat Stabilized
510217 510218 510219	205 206 207	Polyacrylic	Nye Rheotemp 500 30% +/- 5% Fill	Yes – 325 F
510449 516440 516648	203 202 307	Buna N	Exxon Polyrex Grease	NO
516840 516841 516842 516843 516844 516845 516846 516847	206 207 208 210 309 310 311 313	Buna N	Exxon Polyrex Grease	NO

Troubleshooting

		POSSIBLE CAUSE	OUT OF WARRANTY REMEDY ***
IMPELLER DOES NOT TURN	Humming Sound	<ol style="list-style-type: none"> * One phase of power line not connected * One phase of stator winding open Bearings defective Impeller jammed by foreign material Impeller jammed against housing or cover ** Capacitor open 	<ol style="list-style-type: none"> Connect Rewind or buy new motor Change bearings Clean and add filter Adjust Change capacitor
	No Sound	<ol style="list-style-type: none"> * Two phases of power line not connected * Two phases of stator winding open 	<ol style="list-style-type: none"> Connect Rewind or buy new motor
IMPELLER TURNS	Blown Fuse	<ol style="list-style-type: none"> Insufficient fuse capacity Short circuit 	<ol style="list-style-type: none"> Use time delay fuse of proper rating Repair
	Motor Overheated Or Protector Trips	<ol style="list-style-type: none"> High or low voltage * Operating in single phase condition Bearings defective Impeller rubbing against housing or cover Impeller or air passage clogged by foreign material Unit operating beyond performance range Capacitor shorted * One phase of stator winding short circuited 	<ol style="list-style-type: none"> Check input voltage Check connections Check bearings Adjust Clean and add filter Reduce system pressure/vacuum Change capacitor Rewind or buy new motor
	Abnormal Sound	<ol style="list-style-type: none"> Impeller rubbing against housing or cover Impeller or air passages clogged by foreign material Bearings defective 	<ol style="list-style-type: none"> Adjust Clean and add filter Change bearings
	Performance Below Standard	<ol style="list-style-type: none"> Leak in piping Piping and air passages clogged Impeller rotation reversed Leak in blower Low voltage 	<ol style="list-style-type: none"> Tighten Clean Check wiring Tighten cover, flange Check input voltage
<p>* 3 phase units ** 1 phase units *** Disassembly and repair of new blowers or motors will void the Rotron warranty. Factory should be contacted prior to any attempt to field repair an in-warranty unit.</p>			

Blower Disassembly:

WARNING: Attempting to repair or diagnose a blower may void Rotron's warranty. It may also be difficult to successfully disassemble and reassemble the unit.

- 1) Disconnect the power leads. **CAUTION:** Be sure the power is disconnected before doing any work whatsoever on the unit.
- 2) Remove or separate piping and/or mufflers and filters from the unit.
- 3) Remove the cover bolts and then the cover. **NOTE:** Some units are equipped with seals. It is mandatory that these seals be replaced once the unit has been opened.
- 4) Remove the impeller bolt and washers and then remove the impeller. **NOTE:** Never pry on the edges of the impeller. Use a puller as necessary.
- 5) Carefully note the number and location of the shims. Remove and set them aside. **NOTE:** If the disassembly was for inspection and cleaning the unit may now be reassembled by reversing the above steps. If motor servicing or replacement and/or impeller replacement is required the same shims may not be used. It will be necessary to re-shim the impeller according to the procedure explained under assembly.

- 6) Remove the housing bolts and remove the motor assembly (arbor/housing on remote drive models).
- 7) Arbor disassembly (Applicable on remote drive models only):
 - a) Slide the bearing retraining sleeve off the shaft at the blower end.
 - b) Remove the four (4) screws and the bearing retaining plate from the blower end.
 - c) Lift the shaft assembly far enough out of the arbor to allow removal of the blower end snap ring.
 - d) Remove the shaft assembly from the arbor.
 - e) If necessary, remove the shaft dust seal from the pulley end of the arbor.

Muffler Material Replacement:

- 1) Remove the manifold cover bolts and them manifold cover.
- 2) The muffler material can now be removed and replaced if necessary. On blowers with fiberglass acoustical wrap the tubular retaining screens with the fiberglass matting before sliding the muffler pads over the screens.
- 3) Reassemble by reversing the procedure.

NOTE: On DR068 models with tubular mufflers it is necessary to remove the cover and impeller accessing the muffler material from the housing cavity.

Blower Reassembly:

- 1) Place the assembled motor (assembled arbor assembly for remote drive models) against the rear of the housing and fasten with the bolts and washer.
- 2) To ensure the impeller is centered within the housing cavity re-shim the impeller according to the procedure outlined below.
- 3) If blower had a seal replace the seal with a new one.
- 4) Place the impeller onto the shaft making sure the shaft key is in place and fasten with the bolt, washer and spacer as applicable. Torque the impeller bolt per the table below. Once fastened carefully rotate the impeller to be sure it turns freely.
- 5) Replace the cover and fasten with bolts.
- 6) Reconnect the power leads to the motor per the motor nameplate.

Bolt Size	Torque Pound-Force-Foot
1/4-20	6.25 +/- 0.25
5/16-18	11.5 +/- 0.25
3/8-16	20.0 +/- 0.5
1/2-13	49.0 +/- 1
5/8 -11	90.0 +/- 2

Impeller Shimming Procedure:

WARNING: This unit may be difficult to shim. Extreme care may be exercised.

Tools Needed: Machinist's Parallel Bar
Vernier Caliper with depth measuring capability
Feeler gauges or depth gauge

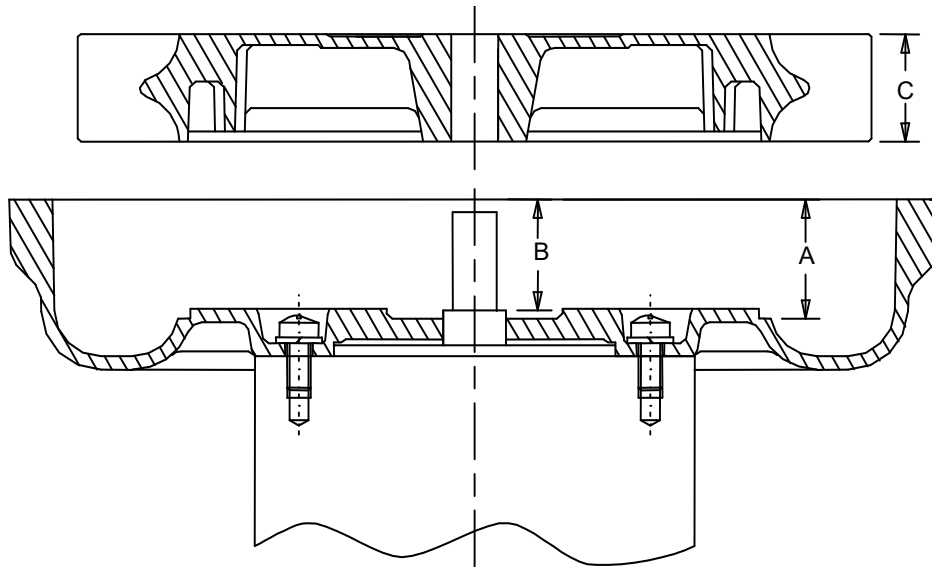
Measure the Following:

- Distance from the flange face to the housing (A)
- Distance from the flange face to the motor shaft shoulder (B)
- Impeller Thickness (C)

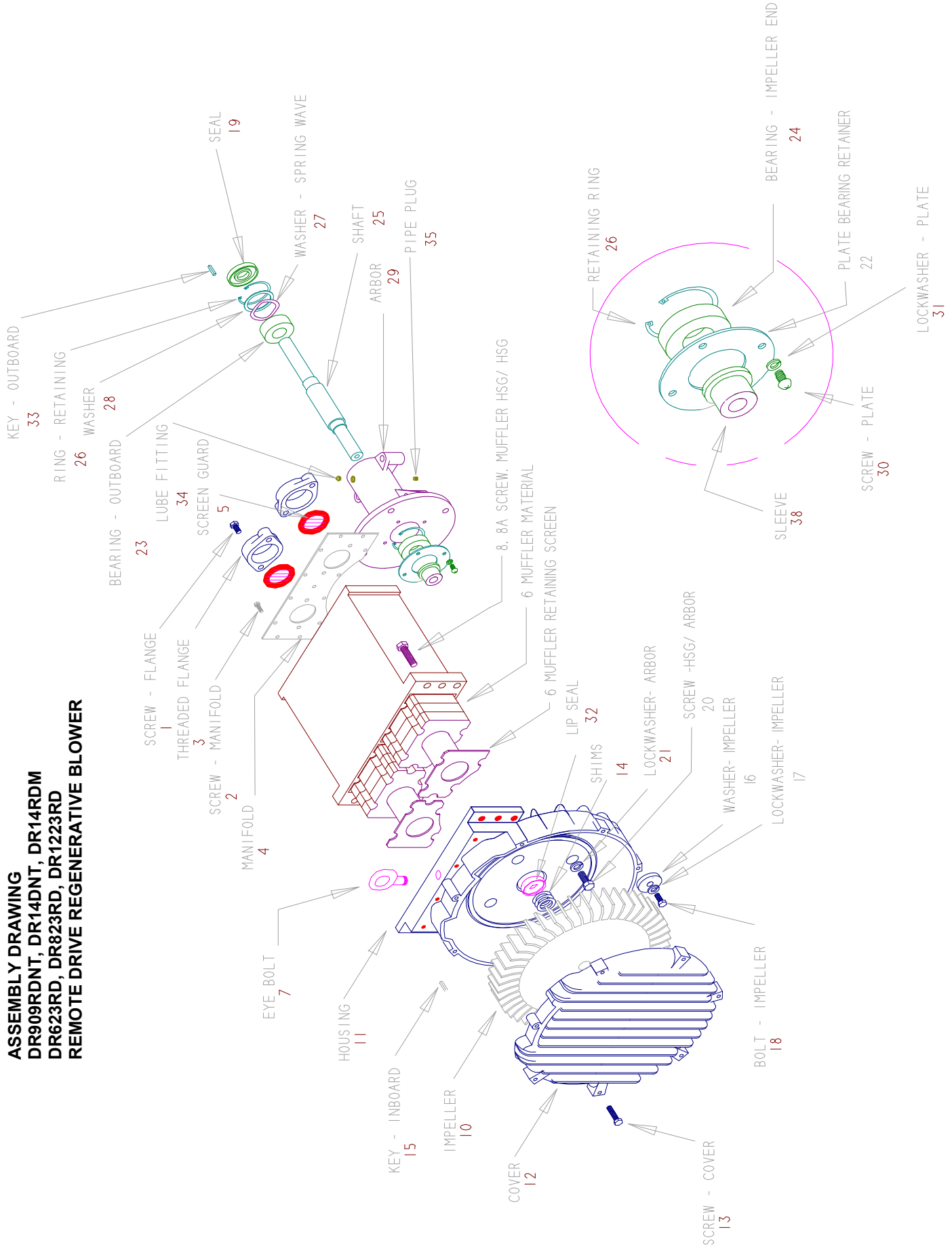
Measurements (A) and (B) are made by laying the parallel bar across the housing flange face and measuring to the proper points. Each measurement should be made at three points, and the average of the readings should be used.

$$\text{Shim Thickness} = B - (A+C)/2$$

After the impeller installation (step #4 above) the impeller/cover clearance can be checked with feeler gauges, laying the parallel bar across the housing flange face. This clearance should nominally be (A-C)/2.



ASSEMBLY DRAWING
DR909RDNT, DR14DNT, DR14RDM
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**Remote Drive DR909RDNT/14RDNT/14RDM/623RD/823RD/1223RD
Service and Parts Manual**

Parts Breakdown

DR909RDNT DR909RDNT DR14RDM DR14RDNT DR14RDNT
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DR909RDNT DR909RDNT DR14RDM DR14RDNT
036921 081962 036963 038755
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Model:
Part No.:

Item No.	Qty.	Req'd	Description						
1	6	(4)	Screw, Flange	155095	(4 pcs)	155025	140016	155067	Not Used
2	18		Screw, Manifold	120325		Not Used	120325	Not Used	Not Used
3	2		Flange	511516		529912	515985	529912	529912
3B	2		O-Ring Flange	Not Used		Not Used	Not Used	155377	Not Used
4	1		Manifold	511565		552639	523438	Not Used	Not Used
4B	1		Manifold Sheet Steel	523435		Not Used	515987	Not Used	Not Used
5			Screen Guard	Not Used		Not Used	Not Used	Not Used	Not Used
6	54		Muffler Material	Not Used		Not Used	Not Used	550073	Not Used
	1		Screen, Muffler Retaining,	Not Used		Not Used	Not Used	550040	Not Used
	1		Screen, Muffler Retaining,	Not Used		Not Used	Not Used	550042	Not Used
	2		Muffler Wrap	Not Used		Not Used	Not Used	550116	Not Used
7	1		Eyebolt	140019		140019	140019	140019	Not Used
8	4		Screw, Muffler Hsg/Hsg	Not Used	(3 pcs)	120251	Not Used	120214	155025
8A	6		Screw, Muffler Hsg/Hsg	Not Used		155067	Not Used	155067	Not Used
8B	4		Nut Muffler hsg/hsg	Not Used		155070	Not Used	Not Used	Not Used
10	1		Impeller	552544		552431	515509	515509	515509
11	1		Housing	515276		552409	515973	515975	552310
11B	1		Muffler Housing	Not Used		Not Used	Not Used	550039	Not Used
12	1		Cover	515359		515359	515910	515910	515910
13	8		Screw, Cover	140016		140016	155069	155069	155069
14	*		Shim .002"	511547		511547	515991	515991	515991
	*		Shim .005"	511548		511548	515992	515992	515992
	*		Shim .010"	511549		511549	515993	515993	515993
	*		Shim .020"	511550		511550	515994	515994	515994
	*		Shim .030"	Not Used		Not Used	Not Used	Not Used	Not Used
15	1		Key, Shaft Inboard	511532		510963	155066	155066	155066
16	1		Washer Flat Impeller	511529		517487	515990	515990	515990

* As needed **Viewed looking at inlet/outlet ports

**Remote Drive DR909RDNT/14RDNT/14RDM/623RD/823RD/1223RD
Service and Parts Manual**

Parts Breakdown

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DR909RDNT DR909RDNT DR14RDM DR14RDNT
036921 081962 036963 038755

Model:

Part No.:

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Item No.	Qty.	Req'd	Description						
17	1		Lockwasher Impeller	251788	160524	251788	251788	251788	251788
18	1		Bolt, Impeller	120210	120210	120210	120210	120210	120210
19	1		Spacer, Shaft/Impeller	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used
			Seal, Shaft/Arbor	516306	510952	516306	516306	516306	516306
20	4		Retainer Seal	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used
			Screw, Hsg/Arbor	155034	120205	140014	120205	120205	120205
21	4		Lockwasher, Hsg/Arbor	Not Used	251788	Not Used	Not Used	Not Used	Not Used
22	1		Plate, Bearing Retainer	516313	510953	516313	516313	516313	516313
23	1		Bearing Outboard	516303	510960	529194	529194	529194	529194
24	1		Bearing, Impeller End	516301	510219	516843	516843	516843	516843
25	1		Shaft	516335	511871	516311	516311	516311	516311
26	2		Ring Retainer	155086	120305	155086	155086	155086	155086
27	1		Washer, Wave Spring	155087	120304	155087	155087	155087	155087
28	1		Washer	516305	510957	(2 pcs)155507	516305	(2 pcs)155507	516310
29	1		Arbor	516309	510951	516310	516310	516310	516310
30	4		Screw, Plate	120204	120118	120204	120204	120204	120204
31	4		Lockwasher, Plate	120203	120203	120203	120203	120203	120203
32			Lip Seal, Shaft/Hsg	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used
33	1		Key, Shaft Outboard	155089	511532	155089	155089	155089	155089
34	2		Lube Fitting	516307	Not Used	Not Used	Not Used	Not Used	Not Used
35	2		Pipe Plug	155131	Not Used	Not Used	Not Used	Not Used	Not Used
36			Heat Slinger Assembly	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used
38	1		Sleeve, Bearing Retainer	516334	511870	516312	516312	516312	516312

* As needed **Viewed looking at inlet/outlet ports

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