



***"Ergonomic Solutions"***

**HTRA-12 SERIES  
RIGHT ANGLE GRINDERS & SANDERS**



**MADE IN THE USA**

**Honsa Ergonomic Technologies, Inc.**

*Made in the U.S.A.*

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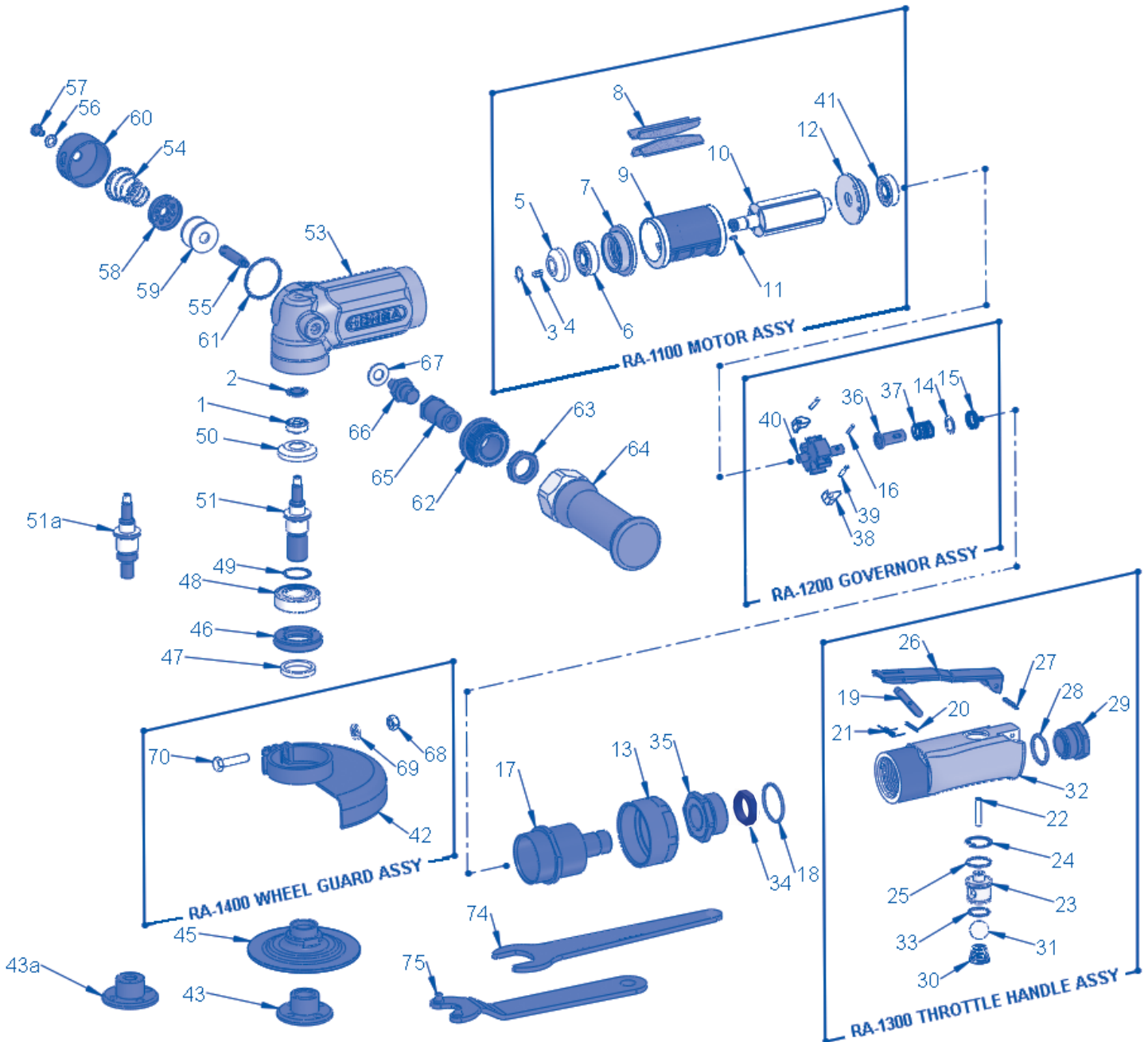
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ITEM	PART	DESCRIPTION	QTY
1■	RA-101	Bearing	1
2	RA-102	Bearing Washer	1
3●	RA-103	Snap Ring	1
4	RA-104	Key	1
5	RA-105	Bevel Pinion	1
6■	RA-106	Ball Bearing	1
7	RA-107	Cylinder Lower Plate	1
8●	RA-108	Rotor Blade	4
9	RA-109	Cylinder	1
10	RA-110	Rotor	1
11	RA-111	Spring Pin	1
12	RA-112	Cylinder Upper Plate	1
13	RA-113	Cup Nut	1
14	RA-114.2	Adjusting Washer	*
	RA-114.3	Adjusting Washer	*
	RA-114.5	Adjusting Washer	*
15	RA-115	Governor Valve Spring Holder	1
16●	RA-116	Needle Roller	1
17	RA-117	Housing Cover	1
18	RA-118	O-Ring	1
19	RA-119	Safety Lock	1
20	RA-120	Spring Pin	1
21	RA-121	Safety Lock Spring	1
22●	RA-122	Needle Roller	1
23	RA-123	Throttle Valve Bushing	1
24	RA-124	Snap Ring	1
25●	RA-125	O-Ring	1
26	RA-126	Throttle Valve Lever	1
27	RA-127	Spring Pin	1
28	RA-128	O-Ring	1
29	RA-129	Inlet Joint	1
30	RA-130	Throttle Valve Spring	1
31	RA-131	Throttle Ball	1
32	RA-132	Throttle Valve Body	1
33●	RA-133	O-Ring	1
34	RA-134	Lock Nut	1
35	RA-135	Damper	1
36	RA-136	Governor Valve	1
37	RA-137	Governor Valve Spring	1
38	RA-138	Governor Weight	2
39	RA-139	Grooved Pin	2

ITEM	PART	DESCRIPTION	QTY
40	RA-140	Governor Cage	1
41■	RA-141	Ball Bearing	1
42	RA-142	Wheel Guard	1
43	RA-143	Wheel Flange (B)	1
43a	RA-143a	Wheel Flange (C)	**
45	RA-145	Wheel Flange (A)	1
46	RA-146	Spindle Bearing Cover	1
47	RA-147	Felt Ring	1
48■	RA-148	Ball Bearing	1
49●	RA-149.2	Wheel Spindle Washer	*
	RA-149.3	Wheel Spindle Washer	*
	RA-149.5	Wheel Spindle Washer	*
50	RA-150	Bevel Gear	1
51	RA-151	5/8"-11 Wheel Spindle	1
51a	RA-151a	3/8"-24 Wheel Spindle	**
53	RA-153	Housing Cover	1
54	RA-154	Muffler Spring	1
55	RA-155	Spacer	1
56	RA-156	Plain Washer	1
57	RA-157	Cap Screw	1
58	RA-158	Exhaust Valve	1
59●	RA-159	Muffler Pad	2
60	RA-160	Exhaust Cover	1
61	RA-161	O-Ring	1
62	RA-162	Damper	1
63	RA-163	Nut	1
64	RA-164	Dead Handle	1
65	RA-165	Joint	1
66	RA-166	Dead Handle Joint	1
67	RA-167	Plain Washer	1
68	RA-168	Nut	1
69	RA-169	Spring Washer	1
70	RA-170	Bolt	1
74	RA-174	Wrench	1
75	RA-175	Spanner Wrench	1
	RA-1100	Motor Assembly	
	RA-1200	Governor Assembly	
	RA-1300	Throttle Handle Assembly	
	RA-1400	Wheel Guard Assembly	
■	RA-172	Bearing Kit	
●	RA-173	Tune-Up Kit (includes RA-172)	
		<i>as needed</i>	*
		<i>option</i>	**



**LUBRICATE DAILY**  
with HONSA Bio-Green Air Tool Lubricant 10WT

## DISASSEMBLY

**CAUTION: If securing grinder in vise, use caution to not over-tighten as this could damage or crush grinder parts.**

1. Disconnect air hose from grinder.
2. Remove Dead Handle parts (62-67), Muffler parts (54-61), Wheel Flange (43/43a), grinding wheel, Wheel Flange (45) using Wrench (74), and Wheel Guard Assembly (RA-1400).
3. Using Spanner Wrench (75), remove Spindle Bearing Cover (46) (LEFT HAND THREAD).
4. Remove Wheel Spindle parts (1, 2, & 46-51/51a) from Housing Cover (53). **IMPORTANT: Be aware of quantity and placement of Shims (49) in order to ensure that they are re-installed accordingly. CAUTION: Do not remove Bevel Gear (50) from Spindle (51/51a) unless replacement is warranted.**
5. Remove Throttle Handle Assembly (RA-1300) from Motor Housing (53) by loosening the Cup Nut (13).
6. Remove Snap Ring (3) from Motor Assembly (RA-1100).
7. Disassemble Motor Assembly (RA-1100) by standing motor (gear side facing up) over a 1-1/4 inch hole. With a 3/8" pin punch, drive Rotor (10) down through Bevel Pinion (5) to break free.
8. Remove Rotor (10) from Governor Assembly (RA-1200) (LEFT HAND THREAD).
9. Disassemble Throttle Handle Assembly (RA-1300).
10. Remove Needle Roller (22) and Snap Ring (24).
11. Pull the Throttle Valve Bushing (23) from the Throttle Valve Body (32).

## INSPECTION

**IMPORTANT: For optimum performance, install Tune-Up Kit (RA-173) EACH TIME maintenance is performed. IMPORTANT: Inspect parts for wear or damage and replace as needed: O-Rings (18, 25, 28, 33, 61), Throttle Valve Lever (26), Safety Lock (19), Spring Pin (20), Safety Lock Spring (21), and Muffler Pads (59).**

**USE OF OTHER THAN HONSA PARTS WILL VOID WARRANTY, MAY DECREASE PERFORMANCE, AND INCREASE MAINTENANCE.**

## ASSEMBLY

1. Clean, dry, and lightly oil all parts using Honsa Bio-Green ATL.
2. Press new Bearing (6) into Cylinder Lower Plate (7) and new Bearing (41) into Upper Plate (12).
3. Press Rotor (10) into Bearing (6) and Cylinder Lower Plate (7).
4. Slide Cylinder (9) over Rotor (10), with Spring Pin (11) facing away from the Cylinder Lower Plate (7).
5. Insert new Rotor Blades (8) into slots of Rotor (10) with straight edges facing outward.
6. Press Bearing (41) and Upper Plate (12) onto Rotor (10), ensuring the holes in the Cylinder (9) and the Cylinder Upper Plate (12) are aligned with Spring Pin (11).
7. Install Key (4) into the slot on the Rotor (10) shaft.
8. Press Bevel Pinion (5) onto Rotor (10) maintaining Key (4) is aligned with Rotor (10) and Bevel Pinion (5).
9. Install Snap Ring (3) onto Rotor (10) shaft.
10. Screw Governor Assembly (RA-1200) into end of Rotor (10) (LEFT HAND THREAD).
11. Install Motor Assembly (RA-1100) and Governor Assembly (RA-1200) into Housing Cover (53) by sliding straight in. **CAUTION: Do not force or pound to install.**
12. Install Bearing Washer (2) and Bearing (1) into Housing Cover (53).
13. Apply a coat of EP1 grease to Gears (5, 50). **CAUTION: Do not pack or overfill gear cavity with grease.**
14. Assemble Wheel Spindle parts (46-51/51a). **IMPORTANT: Include any shims that were previously installed.**
15. Install Wheel Spindle parts (46-51/51a) into Housing Cover (53) by sliding straight in. **CAUTION: Do not force or pound to install. IMPORTANT: Ensure both Gears (5, 50) mate and rotate freely with each other.** Secure in place using spanner wrench to tighten the Spindle Bearing Cover (46).
16. Assemble Throttle Handle Assembly (RA-1300) and install onto Housing Cover (53) by tightening Cup Nut (13).
17. Install Wheel Guard Assembly (RA-1400) onto Housing Cover (53).
18. Install Wheel Flange (45), grinder wheel, and Wheel Flange (43/43a) onto Wheel Spindle (51/51a).
19. Install Dead Handle parts (62-67) and Muffler parts (54-61).

## FUNCTION TEST (without abrasive wheel installed)

1. Connect a 3/8" air hose to tool and actuate throttle several times. Listen for unusual noise and note excessive vibration. Either of these conditions may indicate additional maintenance is required.
2. Check free speed of tool using a tachometer. Free speed must be within 10% but not exceed labeled speed of tool. If free speed exceeds labeled rating of tool, contact Honsa Ergonomics before the tool is put into use.



## **TOOL OPERATING INSTRUCTIONS**

**IMPORTANT:** Before placing this tool in operation, read the following instructions.

This tool is designed to reduce vibration transmitted to the operator. To be effective, it must be used safely. The operator should only hold the tool by the handles provided.

**WARNING:** While this tool is designed to significantly reduce vibration; it is not guaranteed, nor implied to totally remove vibration. Safety procedures and evaluation systems such as those recommended and described in ANSI S3.34, ISO 5349 & ISO 8662 and by the ACGIH for threshold limits of vibration should be used as guidelines for daily exposure of hand-arm vibration. These values should be used as guides for the control of hand-arm exposure and because of individual susceptibility, should not be regarded as defining a boundary between safe and dangerous levels.

THE FOLLOWING SAFETY PROCEDURES ARE RECOMMENDED BY THE COMPRESSED AIR AND GAS INSTITUTE:

1. Eye and ear protection must be worn at all times when operating power tools.
2. NEVER OPERATE AS A GRINDER WITHOUT WHEEL GUARD IN PLACE.

This grinder is equipped with a governor which controls the operating speed. If the governor has been dis-assembled, do not place grinder into service until the spindle free speed has been verified with a tachometer. Free speed must not exceed RPM rating marked on tool.

ADDITIONAL SAFETY INFORMATION IS AVAILABLE FROM THE AMERICAN NATIONAL STANDARDS INSTITUTE, INC, 1430 Broadway, New York, N.Y. 10018 (ANSI B186.1).

## **PROPER OPERATION AND MAINTENANCE**

1. Honsa Ergonomics recommends using a 3/8" air hose filter-regulator-lubricator placed as close as possible to the tool.
2. Use only clean and dry air supply and provide 50 (minimum) CFM @ 90 PSIG (6.2 bar) of air at the tool.
3. OIL TOOLS DAILY (or before putting a new or old tool into service, and after eight hours of use) with HONSA Bio-Green Air Tool Lubricant.
  - a. Pour approximately ½ tablespoon of HONSA Bio-Green Air Tool Lubricant into air inlet.
  - b. Connect air hose and operate tool briefly to allow oil to be carried throughout the interior.
4. Set up and maintain an inspection and repair program which inspects at scheduled intervals, governed by the degree of use to which the tool is subjected.
5. Replacing parts at first sign of wear will avoid more extensive repairs and maintain the tool at its highest efficiency. Use Tune-Up Kit (RA-173).
6. Always use a grinding wheel with a maximum speed rating equal to or exceeding the labeled speed of the tool.
7. Discard and do not use grinding wheels which have been exposed to liquids, have chips or cracks, or if you are unsure of the condition.



### **WARRANTY**

Honsa Ergonomics warrants this tool to be free of defects in materials and original workmanship for one year from date of purchase. The obligation assumed under this guarantee is limited to the replacing of any part or parts which prove to our satisfaction, under examination, to have been defective. This guarantee does not cover damage caused by misuse or normal wear, dirt or debris.

Honsa Ergonomics makes no other warranty, and implied warranties for fitness for a particular use or purpose are hereby disclaimed. Honsa Ergonomics' liability is limited to the purchase price of the tool and Honsa Ergonomics shall not be liable for consequential, indirect or special damages of any nature arising from the sale or use of Honsa Ergonomics tools.

The warranty shall not apply to any tool that has been subjected to: misuse, accident, negligence or modification; or in which parts not made and supplied by Honsa Ergonomics have been used, altered or repaired by other than Honsa Ergonomics personnel or authorized repair/maintenance companies, or in the determination of Honsa Ergonomics, any non-intended use.

### **FACTORY SERVICE**

Any tool being returned for service must be pre-approved and a return authorization number must be issued for each tool by approved Honsa Ergonomics personnel.

All Honsa Ergonomics tools must be sent prepaid to:

**Honsa Ergonomic Technologies, Inc.  
1300 11th Street West  
Milan, IL 61264, USA**