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Edition 2
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Air Screwdrivers and Angle Wrenches

1RL Series

Parts Information



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IR Ingersoll Rand®

1RL Motor and Gearing - Parts List

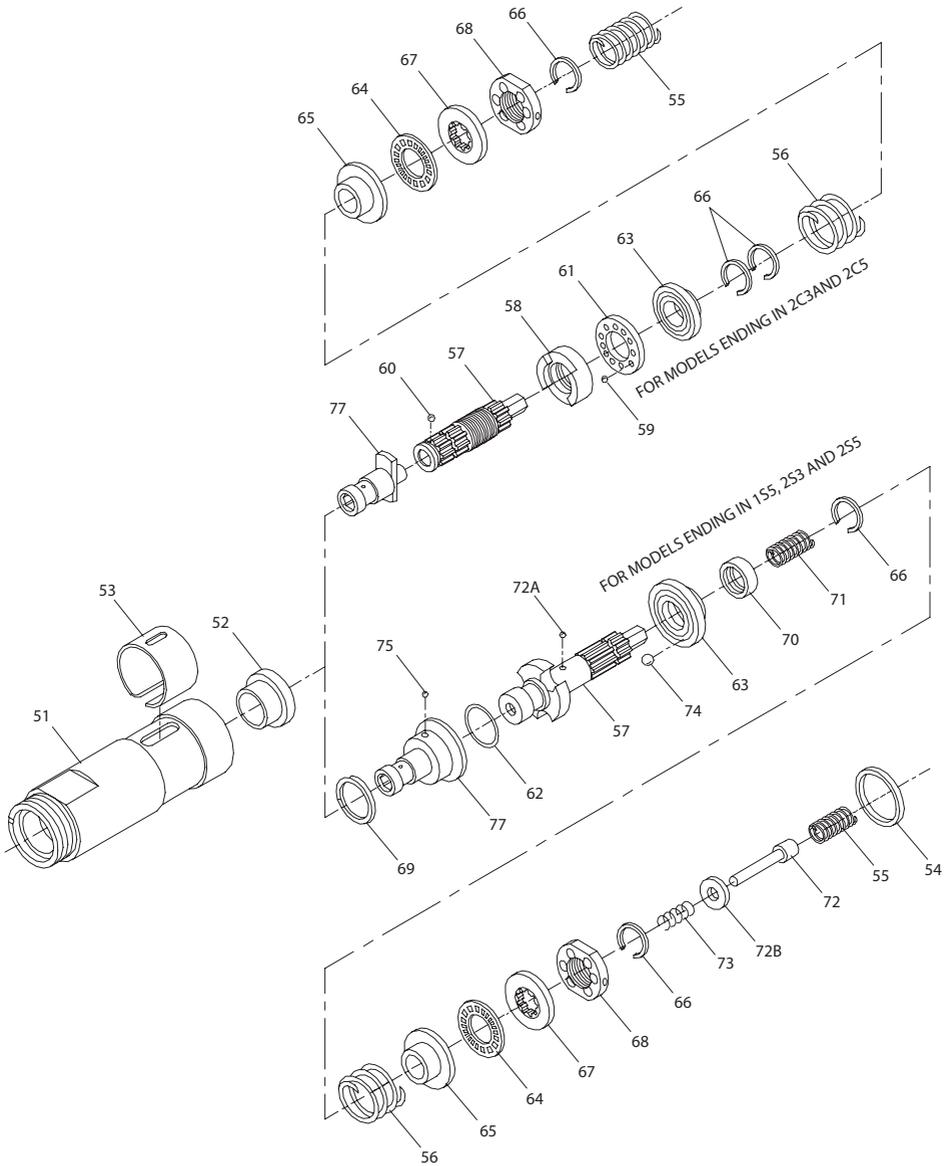
Item	Part Description	Part Number	Item	Part Description	Part Number
	Motor Housing Assembly		• 27	Inlet Bushing Assembly	
	for models ending in 2C3 or 2C5	3RL-EU-AL40	† 28	Inlet Screen	
	for models ending in 2D5	3RL-EU-A40	29	Rotor	
1	for models ending in 1S5, 2S3 or 2S5	3RLS-EU-A40		for models ending in 2C3, 2C5 or 2D5	3RL-53
	for models ending in 1S5, 2S3 or 2S5	3RLS-EU-B40		for models ending in 1S5, 2S3 or 2S5	3RP-53
	for models ending in 2C3, 2C5 or 2D5	3RLS-EU-B40	30	Front End Plate	
	for models ending in 1S5, 2S3 or 2S5	3RLS-EU-B40	31	Rear End Plate	
*	Warning Label		† 32	Rotor Bearing (2)	
2	Valve Housing Alignment Pin		† 33	Rear Rotor Bearing Retainer	
	(for models ending in 1S5, 2S3 or 2S5)	3RL-15	† 34	Front Rotor Bearing Retainer	
3	Reverse Valve	3RL-329	†• 35	Vane Packet (set of 5 Vanes)	
4	Reverse Valve Seal	WFS182-307	36	Cylinder	
• 5	Reverse Valve Spring	SPA102R-515	37	Cylinder Dowel	
• 6	Valve Lock Pin	SPA102R-667	†• 38	Rear End Plate Gasket	
• 7	Retainer Setscrew	SPA102R-669	39	Gear Case Assembly	
• 8	Lock Pin Retainer	3RL-668		for L ratio	3RL-L-A37
9	Throttle Valve Housing (for models ending in 1S5, 2S3 or 2S5)	3RL-503	40	for M, N, O and Q ratios	
†• 10	Throttle Valve Spring	3RL-51	41	Spindle Bearing	
11	Throttle Valve Plunger	3RL-302	42	Spindle Bearing Retainer	
12	Throttle Valve Cap	3RL-266		Spindle Planet Gear	
13	Throttle Valve Ball	4U-722		for L ratio (19 teeth) (3)	3RL-L-10
14	Throttle Valve Housing Adapter (for models ending in 1S5, 2S3 or 2S5)	3RL-502		for M and O ratios (14 teeth) (3)	3RL-M-10
• 15	Throttle Valve Housing Adapter Seal (for models ending in 1S5, 2S3 or 2S5)	PS3-67		for N and Q ratios (17 teeth) (3)	3RL-N-10
16	Exhaust Deflector Alignment Pin (for models ending in 1S5, 2S3 or 2S5)	3RL-15	43	Spindle	
† 17	Throttle Valve Housing Seal (for models ending in 1S5, 2S3 or 2S5)	3RL-210		for L ratio	3RL-L-108
18	Throttle Valve Housing Cap Screw (4) (for models ending in 1S5, 2S3 or 2S5)	3RL-510		for M and O ratios	3RL-M-108
19	Throttle Valve Housing Cap Screw Lock Washer (4) (for models ending in 1S5, 2S3 or 2S5)	3RL-511		for N and Q ratios	3RL-N-108
20	Throttle Ball (for models ending in 1S5, 2S3 or 2S5)	8U-722	44	Spindle Retaining Ring	
20A	Throttle Ball Seat (for models ending in 1S5, 2S3 or 2S5)	3RP-303	45	Rotor Pinion (for M and N ratios)	
† 21	Throttle Ball Spring (for models ending in 1S5, 2S3 or 2S5)	3RP-51	46	Gear Head Spacer (for M, N, O and Q ratios)	
†• 22	Muffler Element (4)	3RL-311	47	Gear Head	
• 23	Exhaust Deflector Seal			for M ratio	3RL-M-216
	Exhaust Deflector Assembly			for N ratio	3RL-N-216
	for models ending in 2C3 or 2C5	3RL-AL23		for O ratio	M002-216-028
	for models ending in 1S5, 2D5, 2S3 or 2S5	3RL-A23		for Q ratio	3RL-Q-216
24	Exhaust Deflector	3RL-23	48	Gear Head Planet Gear	
25	Throttle Lever Pin (2)	3RL-120		for M and N ratios (14 teeth) (3)	3RL-M-10
26	Throttle Lever			for O and Q ratios (19 teeth) (3)	3RL-L-10
	for models ending in 2C3 or 2C5	3RL-L273	49	Motor Clamp Washer	
	for models ending in 1S5, 2D5, 2S3 or 2S5	3RL-273	50	Clamp Washer Retaining Ring	
			50A	Push Rod	
			50B	Housing Cap Wrench	
			50C	Nameplate	
			*	Suspension Ball	
			*	Hanger	
			*	Exhaust Hose	
			*	Tune-up Kit (includes illustrated parts 10, 17, 21, 22, 28, 32 [2], 33, 34, 35 and 38)	
			*	Inlet (1/4" NPT) (for 1RL and 1RP)	
			*	Retainer	

* Not illustrated.

• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

† Indicates Tune-up Kit part.

Series IRL and 1RLS Clutches - Exploded View



Series IRL and 1RLS Clutches - Parts List

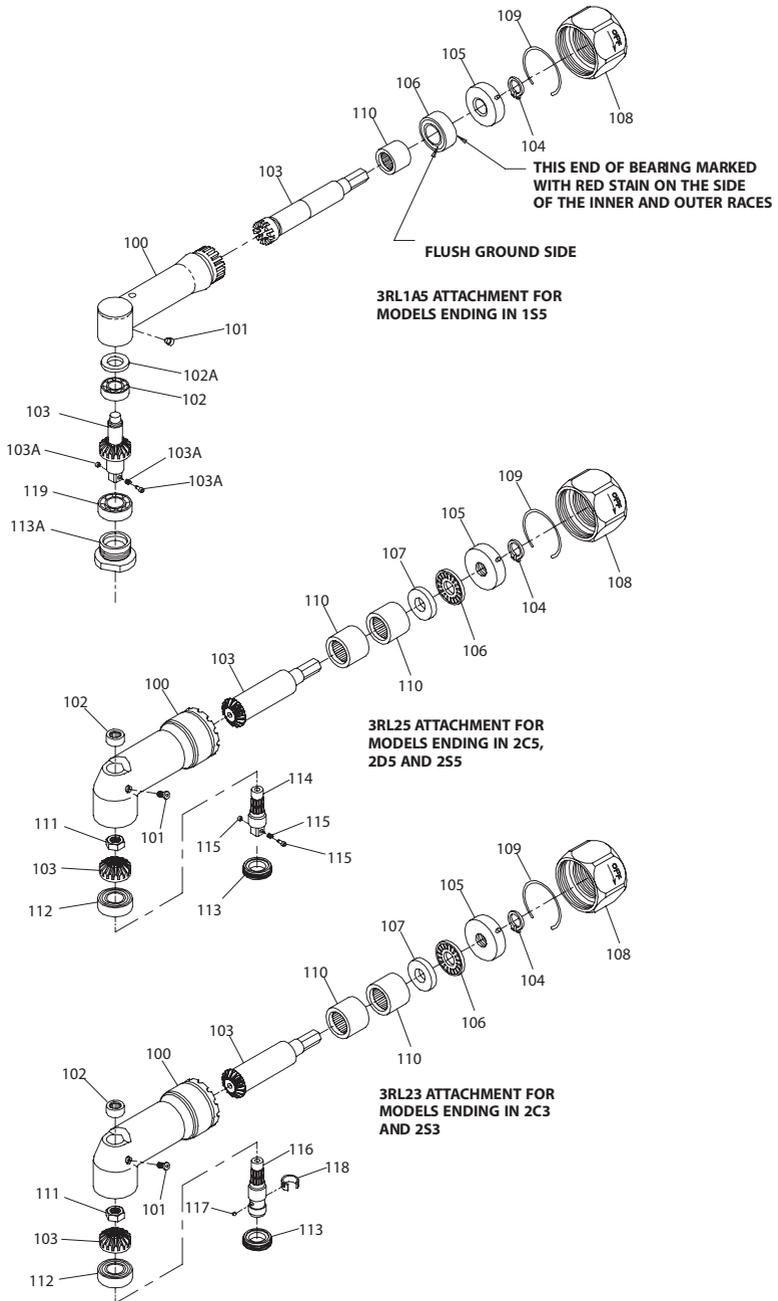
Item	Part Description	For Models Ending in 2C3 or 2C5	For Models Ending in 1S5, 2S3 or 2S5
	Adjustable Cushion Clutch Assembly	3RL2C-A580	---
	Adjustable Shutoff Clutch Assembly		
	for models ending in 1S5	---	3RL2S-AH580
	for models ending in 2S3 or 2S5	---	3RL2S-A580
51	Clutch Housing Assembly	3RL2C-B580	3RL2C-B580
52	Clutch Housing Bushing	3D1-781	3D1-781
53	Adjusting Hole Cover	3S3-415	3S3-415
54	Clutch Housing Spacer	---	3RL-504
• 55	Clutch Return Spring	3S3-405	3S3-405
	Clutch Driver Assembly		
	with light Clutch Spring	3C1-A581	3RL2S-A581
	with heavy Clutch Spring (standard for models ending in 1S5 only)	---	3RL2S-AH581
56	Clutch Spring		
	Light (Black)	3S3-L583	3S3-L583
	Medium (Yellow)	3S3-M583	3S3-M583
	Heavy (Green)	3S3-H583	3S3-H583
▣ 57	Clutch Driver	3C1-581	3S3-581
58	Clutch Jaw	3C1-589	---
• 59	Clutch Ball (11) (.125" diameter)	AV1-255	---
• 60	Jaw Bearing Ball (10) (.125" diameter)	AV1-255	---
61	Clutch Ball Spacer	3C1-401	---
62	Clutch Driver Seal	---	R0BR1C-283
63	Clutch Ball Seat	3C1-627	3S3-627
64	Thrust Bearing	161A32-105	161A32-105
65	Clutch Spring Seat	3C1-623	3C1-623
• 66	Spring Seat Stop (3 for models ending in 2C3 or 2C5; 2 for models ending in 1S5, 2S3 or 2S5)	3S3-701	3S3-701
67	Adjusting Nut Lock	3S3-588	3S3-588
68	Adjusting Nut	3S3-582	3S3-582
69	Ball Retaining Ring	---	3S3-625
70	Shutoff Collar	---	3S3-402
71	Collar Return Spring	---	3S3-407
▣ 72	Shutoff Plunger	---	3S3-408
72A	Shutoff Plunger Ball (4) (3/32" diameter)	---	R000B-263
72B	Spacer Packet (set of 5 Spacers)	---	3RL-665-5
▣ 73	Plunger Return Spring	---	3S3-420
74	Clutch Cam Ball (3) (1/4" diameter)	---	4U-722
• 75	Bevel Pinion Driver Bearing Ball (10) (1/8" diameter)	---	AV1-255
77	Bevel Pinion Driver	3C3-586	3S3-586
78	Push Rod	---	3RP-435
*	Clutch Adjusting Key	5C1-416	5C1-416

* Not illustrated.

• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

▣ When replacing any of these parts, it is necessary to order Spacer Packet (72B) Part Number 3RL-665-5.

1RL Angle Attachment - Exploded View



1RL Angle Attachment - Parts List

Item	Part Description	For Models Ending in 155	For Models Ending in 2C3 or 2S3	For Models Ending in 2C5, 2D5 or 2S5
	Angle Attachment	3RL1A5	3RL23	3RL25
100	Angle Housing Assembly	3RL1A-A550	3RL2-A550	3RL2-A550
101	Grease Fitting	D0F9-879	D0F9-879	D0F9-879
102	Spindle Upper Bearing	---	120A4-603	120A4-603
102	Upper Spindle Bearing	7L1A-603	---	---
102A	Shim Packet	7L1A-P448	---	---
103	Matched Gear Set (Bevel Gear and Pinion not sold separately)	3RL1A5-A591	3RL2-A552	3RL2-A552
103A	Socket Retainer Assembly (consists of Plunger, Spring and Washer)	500B-816A	---	---
104	Thrust Bearing Retainer	3RL2-705	3RL2-705	3RL2-705
105	Rear Thrust Bearing Seat	3RL1A-682	3RL2-682	3RL2-682
106	Bevel Pinion Thrust Bearing	3RL1A-514	3RL2-105	3RL2-105
107	Front Thrust Bearing Seat	---	3RL2-683	3RL2-683
108	Coupling Nut	3RL2-27	3RL2-27	3RL2-27
109	Coupling Nut Retainer	3RL2-29	3RL2-29	3RL2-29
110	Bevel Pinion Bearing (2 for 3RL23 and 3RL25; 1 for 3RL1A5)	7AH-24	H54U-511B	H54U-511B
111	Bevel Gear Retainer Nut	---	120A4-578	120A4-578
112	Lower Spindle Bearing	---	120A4-593	120A4-593
113	Angle Housing Cap	---	120A4-531	120A4-531
113A	Angle Housing Cap	7L1A-531	---	---
114	1/4" Square Drive Spindle Assembly	---	---	141A9-A607-1/
115	Socket Retainer (consists of Plunger, Spring and Washer)	---	---	500B-816A
116	1/4" Hex Bit Holder Spindle Assembly (for standard bits)	---	5L2C3-B586	---
117	Bit Retaining Ball (0.125" diameter)	---	AV1-255	---
118	Bit Retaining Spring	---	102A60-241	---
119	Spindle Bearing	7L1A-593	---	---

* Not illustrated.

• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

1RL Spindle Assembly Parts List (Equipment Available at Extra Cost)

Item	Part Description	Part Number
	Spindle Assembly	
114	1/4" square drive	141A9-A607-1/4
*	3/8" square drive	141A12-A607
*	1/4" hex recess (for insert bits)	5L2C4-B386
115	Socket Retainer (consists of Plunger, Spring and Washer for No. 141A9-A607-1/4 Spindle)	500B-816A
*	Socket Retaining Plunger (for No. 141A12-A607 Spindle)	5020-716
*	Socket Retaining Plunger Spring (for No. 141A12-A607 Spindle)	401-718
*	Bit Retainer (for No. 5L2C4-B386 Spindle)	5L2C4-425
116	1/4" hex recess (for standard bits)	5L2C3-B586
*	3/8-24 Thread Drill Chuck Spindle (requires 7L2A4-531 Angle Housing Cap)	7L2A4-791
117	Bit Retaining Ball (0.125" diameter for 5L2C3-B586 Spindle)	AV1-255
118	Bit Retaining Spring (for 5L2C3-B586 Spindle)	102A60-241
*	Angle Housing Cap (for use only with the 7L2A4-791 Spindle)	7L2A4-531

* Not illustrated.

Clutch Spring Selection Chart

Model	Torque Range (Soft Draw)		
	Light Clutch Spring (Black)	Medium Clutch Spring (Yellow)	Heavy Clutch Spring (Green)
1RLL2C3, 1RLL2S3, 1RLL2C5 and 1RLL2S5	5 to 19 in-lb (0.6 to 2.1 Nm)	---	---
1RLM2C3, 1RLM2S3, 1RLM2C5 and 1RLM2S5	3.5 to 23 in-lb (0.4 to 2.6 Nm)	4.5 to 30 in-lb (0.5 to 3.4 Nm)	---
1RLN2C3, 1RLN2S3, 1RLN2C5 and 1RLN2S5	2 to 23 in-lb (0.2 to 2.6 Nm)	3.5 to 34 in-lb (0.4 to 3.8 Nm)	7 to 46 in-lb (0.8 to 5.2 Nm)
1RLO2S3 and 1RLO2S5	3.5 to 23 in-lb (0.4 to 2.6 Nm)	3.5 to 34 in-lb (0.4 to 3.8 Nm)	7 to 60 in-lb (0.8 to 6.8 Nm)

Parts and Maintenance

When the life of the tool has expired, it is recommended that the tool be disassembled, degreased and parts be separated by material so that they can be recycled.

Tool repair and maintenance should only be carried out by an authorized Service Center.

Refer all communications to the nearest **Ingersoll Rand** office or Distributor.

Related Documentation

For additional information refer to:

Product Safety Information Manual 04585006.

Product Information Manual 80167380.

Product Maintenance Information Manual 16575250.

Manuals can be downloaded from ingersollrandproducts.com.

Notes:

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ingersollrandproducts.com

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