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Air Screwdrivers and Angle Wrenches

1RL Series

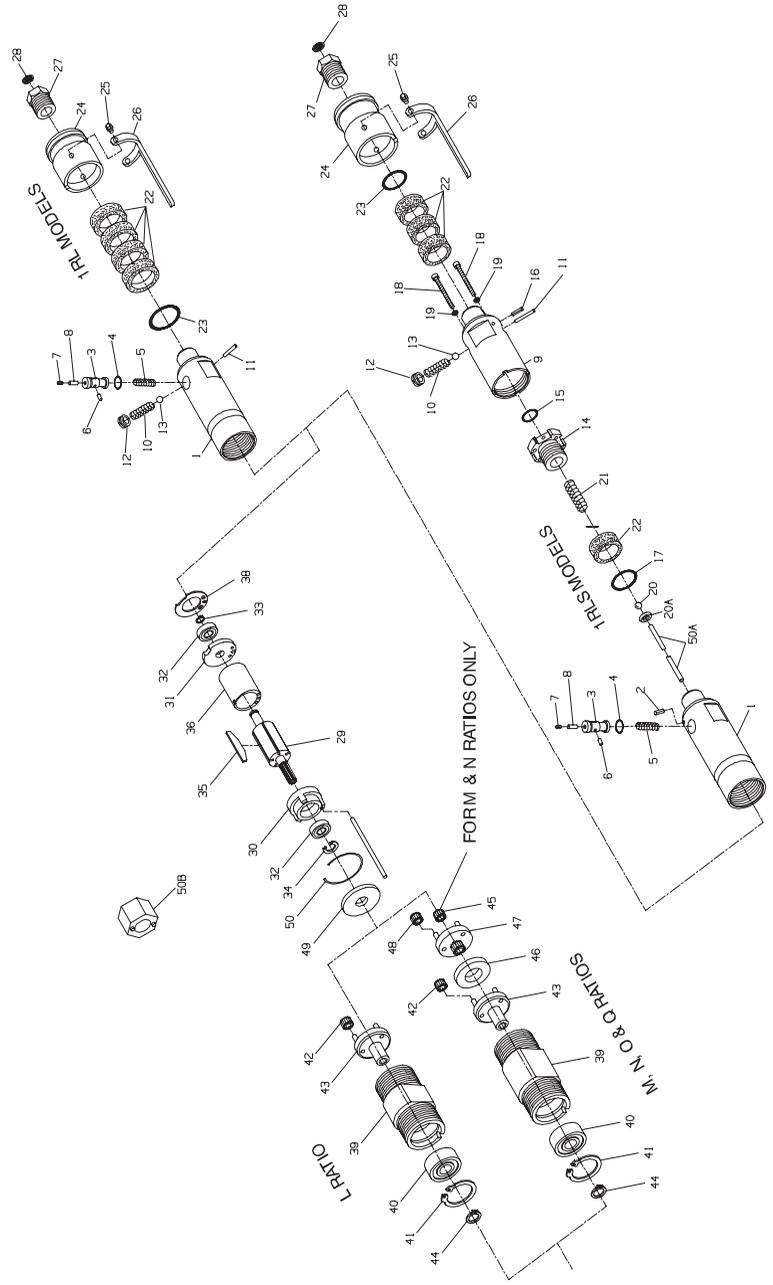
Parts Information



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 **Ingersoll Rand**[®]

1RL Motor and Gearing Exploded Diagram



(Dwg. TPA1233-3a)

1RL Motor and Gearing Parts List

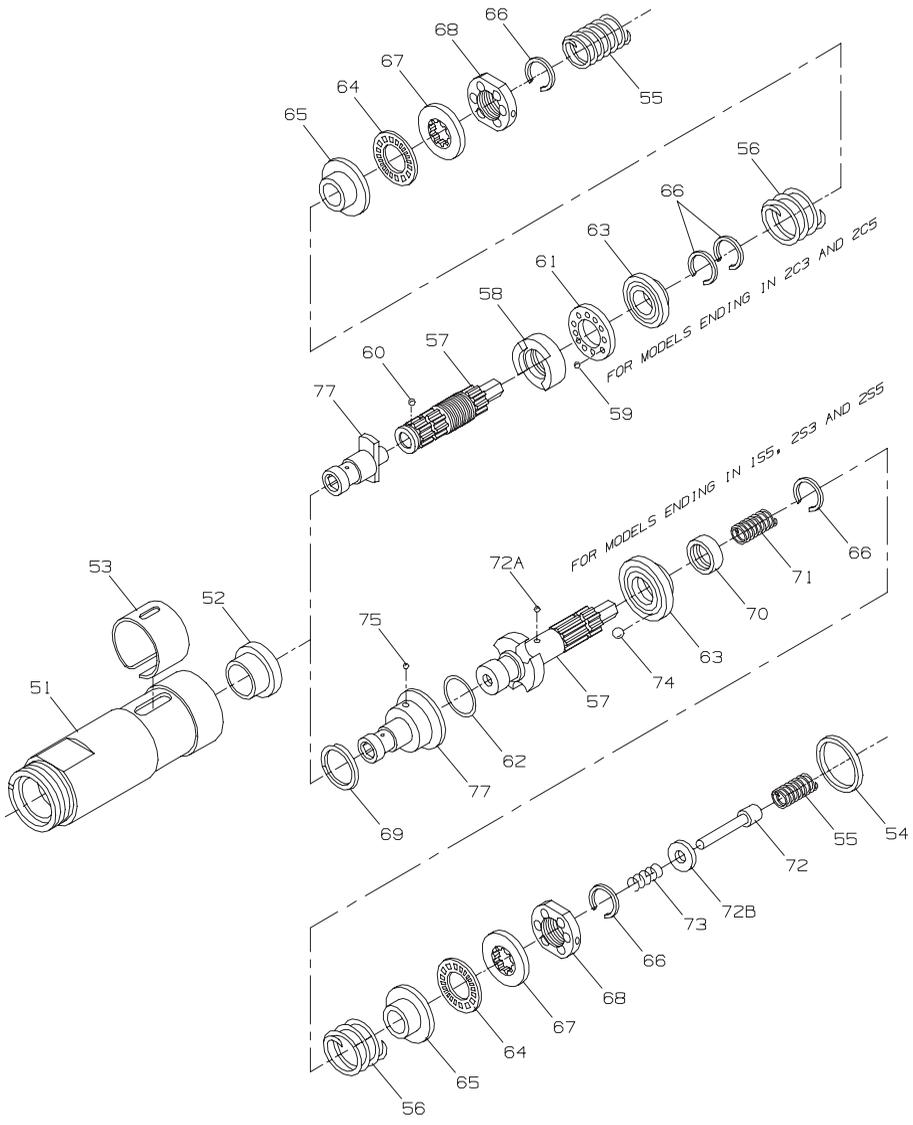
Item	Part Description	Part Number	Item	Part Description	Part Number
	Motor Housing Assembly			for models ending in 2C3 or 2C5	3RL-L273
	for models ending in 2D5	3RL-EU-AL40		for models ending in 1S5, 2D5, 2S3 or 2S5	3RL-273
	for models ending in 1S5, 2S3 or 2S5	3RLS-EU-A40	* 27	Inlet Bushing Assembly	3RL-A465
1	Motor Housing		† 28	Inlet Screen	3RL-61
	for models ending in 2C3, 2C5 or 2D5	3RLS-EU-B40	29	Rotor	
	for models ending in 1S5, 2S3 or 2S5	3RLS-EU-B40		for models ending in 2C3, 2C5 or 2D5	3RL-53
*	Warning Label	WARNING-28-99	30	for models ending in 1S5, 2S3 or 2S5	3RP-53
2	Valve Housing Alignment Pin		31	Front End Plate	3RL-11
	(for models ending in 1S5, 2S3 or 2S5)	3RL-15	32	Rear End Plate	3RL-12
3	Reverse Valve	3RL-329	†	Rotor Bearing (2)	DG10-22
4	Reverse Valve Seal	WFS182-307	†	Rear Rotor Bearing Retainer	8SL-305
* 5	Reverse Valve Spring	SPA102R-515	†	Front Rotor Bearing Retainer	3RL-13
* 6	Valve Lock Pin	SPA102R-667	†	Vane Packet (set of 5 Vanes)	3RL-42-5
* 7	Retainer Setscrew	SPA102R-669	†	Cylinder	3RL-3
* 8	Lock Pin Retainer	3RL-668	†	Cylinder Dowel	3RL-98
9	Throttle Valve Housing (for models ending in 1S5, 2S3 or 2S5)	3RL-503	38	Rear End Plate Gasket	3RL-739
†	Throttle Valve Spring	3RL-51	39	Gear Case Assembly	
11	Throttle Valve Plunger	3RL-302		for L ratio	3RL-110
12	Throttle Valve Cap	3RL-266	40	for M, N, O and Q ratios	3RLM-A37
13	Throttle Valve Ball	4U-722	41	Spindle Bearing	R00A-510
14	Throttle Valve Housing Adapter		42	Spindle Bearing Retainer	3RL-28
	(for models ending in 1S5, 2S3 or 2S5)	3RL-502		for L ratio (19 teeth) (3)	3RL-10
* 15	Throttle Valve Housing Adapter Seal			for M and O ratios (14 teeth) (3)	3RLM-10
	(for models ending in 1S5, 2S3 or 2S5)	PS3-67	43	for N and Q ratios (17 teeth) (3)	3RLN-10
16	Exhaust Deflector Alignment Pin			Spindle	
	(for models ending in 1S5, 2S3 or 2S5)	3RL-15		for L ratio	3RL-108
† 17	Throttle Valve Housing Seal			for M and O ratios	3RLM-108
	(for models ending in 1S5, 2S3 or 2S5)	3RL-210	44	for N and Q ratios	3RLN-108
18	Throttle Valve Housing Cap Screw (4)		45	Spindle Retaining Ring	3RL-6
	(for models ending in 1S5, 2S3 or 2S5)	3RL-510	46	Rotor Pinion (for M and N ratios)	3RLM-17
19	Throttle Valve Housing Cap Screw		47	Gear Head Spacer (for M, N, O and Q ratios)	3RL-80
	Lock Washer (4) (for models ending in 1S5, 2S3 or 2S5)	3RL-511		Gear Head	
20	Throttle Ball			for M ratio	3RLM-216
	(for models ending in 1S5, 2S3 or 2S5)	8U-722	48	for N ratio	3RLN-216
20A	Throttle Ball Seat (for models ending in 1S5, 2S3 or 2S5)	3RP-303		for O ratio	M002-216-028
	Throttle Ball Spring			for Q ratio	3RLQ-216
† 21	Throttle Ball Spring			Gear Head Planet Gear	
	(for models ending in 1S5, 2S3 or 2S5)	3RP-51	49	for M and N ratios (14 teeth) (3)	3RLM-10
†	Muffler Element (4)	3RL-311	50	for O and Q ratios (19 teeth) (3)	3RL-10
* 23	Exhaust Deflector Seal	3RL-210	50A	Motor Clamp Washer	3RL-207
	Exhaust Deflector Assembly		50B	Clamp Washer Retaining Ring	3RL-208
	for models ending in 2C3 or 2C5	3RL-AL23	50C	Push Rod	3RP-435
	for models ending in 1S5, 2D5, 2S3 or 2S5	3RL-A23		Housing Cap Wrench	141A12-26
24	Exhaust Deflector	3RL-23	*	Nameplate	04725032
25	Throttle Lever Pin (2)	3RL-120	*	Suspension Bail	7L-365
26	Throttle Lever		*	Hanger	3RA-365
			*	Exhaust Hose	3RL-284
			*	Tune-up Kit (includes illustrated parts 10, 17, 21, 22, 28, 32 [2], 33, 34, 35 and 38)	3RL-TK2
			*	Inlet (1/4" NPT) (for 1RL and 1RP)	3RL-565
			*	Retainer	500B-815AX

* 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 Diagram



(Dwg. TPA951-4a)

Series IRL and 1RLS Clutches Parts List

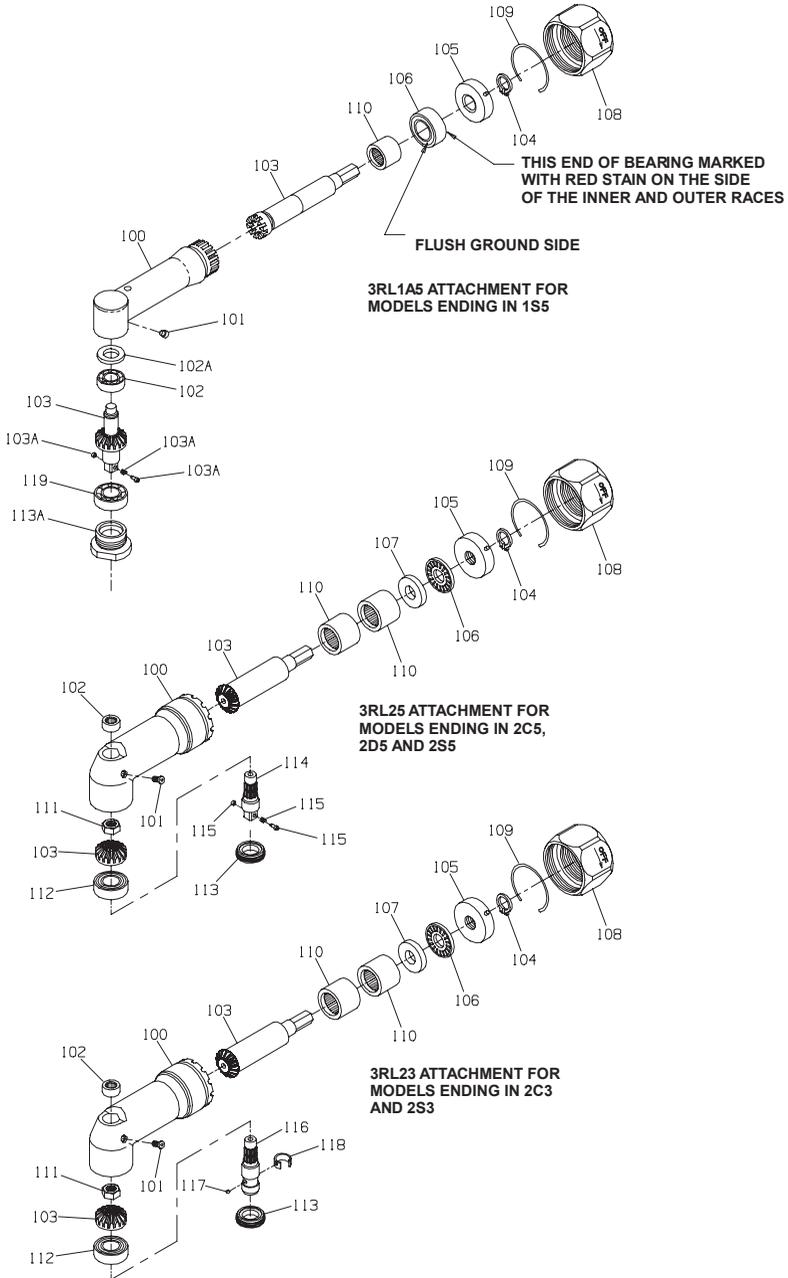
Item	Part Description	For Models Ending in 2C3 or 2C5	For Models Ending in 1S5, 2S3 or 2S5
	Adjustable Cushion Clutch Assembly	3RL2C-A580	---
	Adjustable Shutoff Clutch Assembly		
	for models ending in 1S5	---	3RL2S-AH580
	for models ending in 2S3 or 2S5	---	3RL2S-A580
51	Clutch Housing Assembly	3RL2C-B580	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 Diagram



(Dwg. TPA1285-1)

1RL Angle Attachment Parts List

Item	Part Description	For Models Ending in 1S5	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-A607-1/4
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 www.irtools.com.

www.irttools.com

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