



16574543
Edition 2
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Air Screwdrivers

QA1L Series (High Torque)

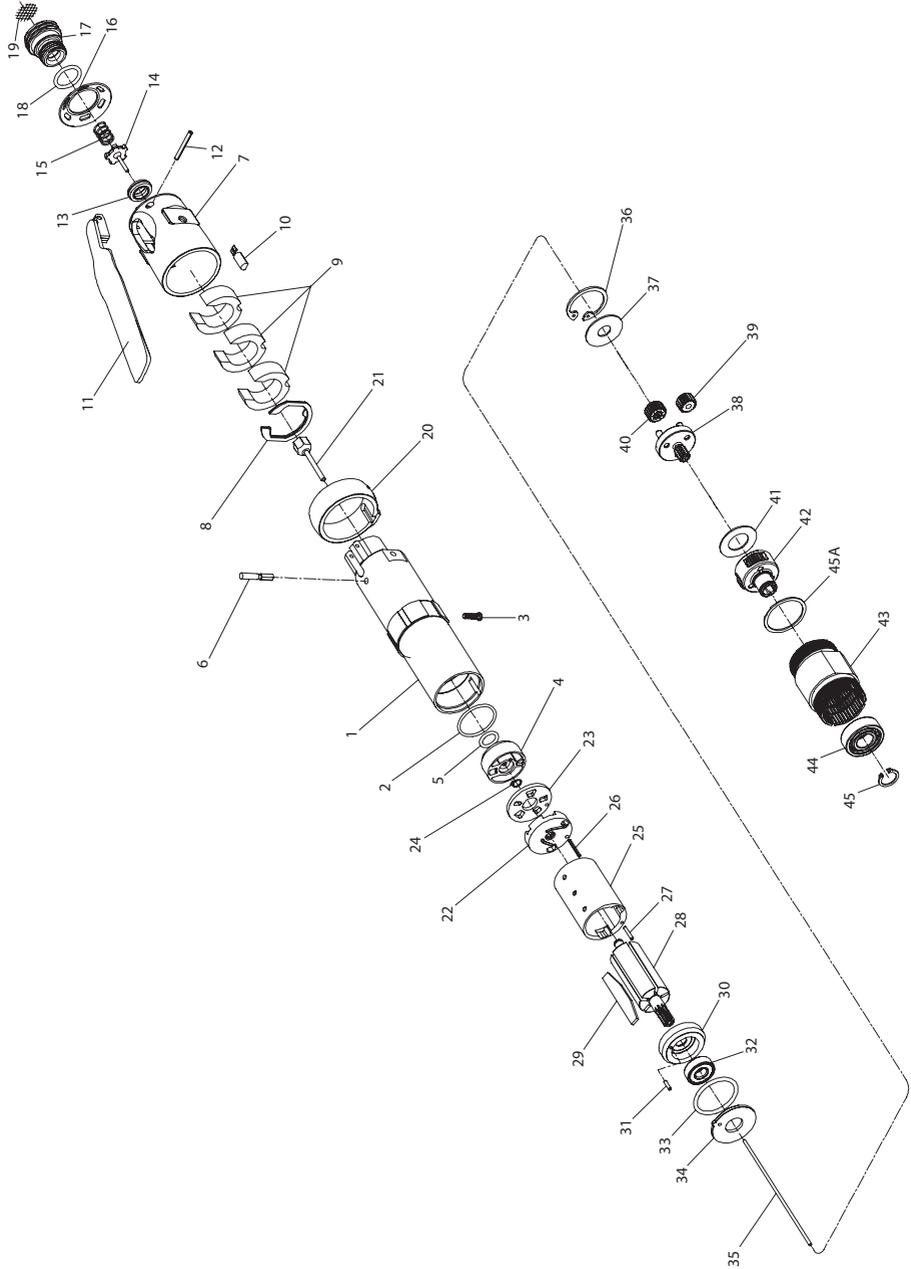
Parts Information



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QA1L High Torque Angle Fastener Motor and Gearing Exploded Diagram



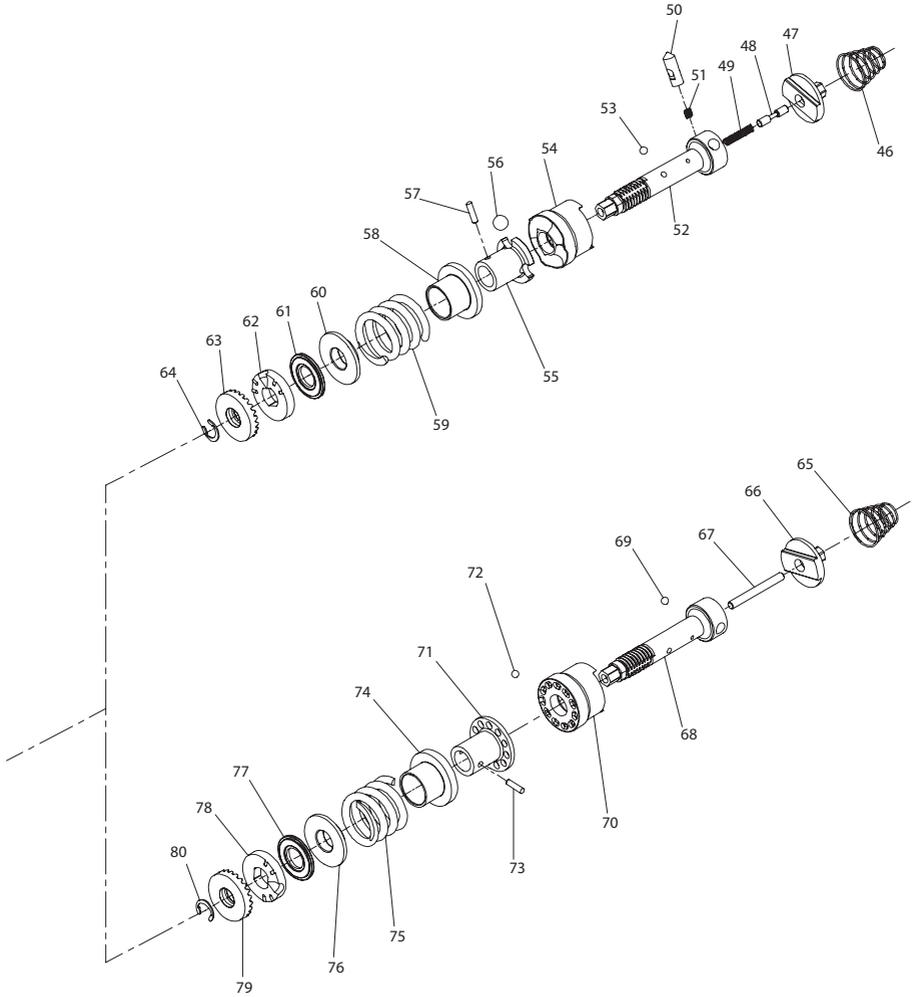
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QA1L High Torque Angle Fastener Motor and Gearing Parts List

Item	Part Description	Part Number	Item	Part Description	Part Number	
1	Motor Housing	TRL-40	28	Rotor		
2	Housing O-Ring	TRH-104		for Models with an Automatic Shutoff Valve	TRH-53	
3	Housing Screw	TRH-330		for Models without an Automatic Shutoff Valve	TRD-53	
4	Reverse Valve Assembly			29	Vane Packet (set of 5 Vanes)	TRH-42-5
	for Models with an Automatic Shutoff Valve	TRH-A329	30	Front End Plate Assembly	TRH-A11	
	for Models without an Automatic Shutoff Valve	TRH-A3291	31	End Plate Alignment Pin	TRH-98-2	
			32	Front Rotor Bearing	TRH-24	
5	Reverse Valve Seal	R1A-159	33	Motor Seal	TRH-211	
6	Throttle Plunger	TRL-302	34	Motor Clamp Washer	TRH-207	
7	Back Cap	TRL-231	35	Push Rod (for Models with an Automatic Shutoff Valve)	TRH-425	
8	Back Cap Gasket	TRL-A283		36	Gear Retainer	TRH-28
9	Muffler Element (3)	TRL-311	37	Gear Head Spacer	TRH-81	
10	Memory Chip (for models with memory chip only)	TRH-800	38	Planet Gear Head Assembly (includes gear shafts)		
11	Throttle Lever	TRL-273		for Series QA1L02	TRH-A2169-16	
12	Throttle Lever Pin	TRL-98		for Series QA1L05	TRH-A2169-10	
13	Throttle Valve Seat	TRH-303		39	Planet Gear (3 for each Gear Head)	
14	Throttle Valve	TRD-A302		for Series QA1L02	TRH-10-16	
15	Throttle Valve Spring	TRL-51		for Series QA1L05	TRH-10-10	
16	Exhaust Diffuser	TRH-123	40	Gear Head Pinion (for Series QA1L05 only)	TRH-17-21	
17	Inlet Bushing Assembly			41	Planet Gear Head Spacer	TRH-82
	for 1/4-18 NPT Thread	TRH-A465		42	Rear Spindle Assembly (includes all spindle gearing)	TRH-A8-10
	for 1/4-19 BSPT Thread	TRH-A465-B	43	Rear Gear Case	TAH-37	
18	Inlet Bushing Seal	AF120-290	44	Spindle Bearing	TRH-510	
19	Inlet Screen	TRH-61	45	Spindle Bearing Retaining Ring	4E-6	
20	Reverse Lever	TRH-273	45A	Spindle Bearing Seat	TRH-208	
21	Automatic Shutoff Valve (for all Models with a Shutoff Clutch)	TRH-A435		*	Suspension Bail	7L-365
22	Rear End Plate Assembly (includes rear rotor bearing)	TRH-A12-1	*	Piped-Away Exhaust Kit (optional)	LG1-K284	
	Rear End Plate Face Plate	TRH-12-2	*	Tune-Up Kit (Includes the following items: 2, 5, 8, 9, 13, 14, 15, 18, 19, 21, 24, 29, 31, 32 and 33)	Q2-TK1	
24	Rear End Plate Assembly Retainer	8SL-305				
25	Cylinder Assembly	TRH-A3				
26	Cylinder Rear Alignment Pin	TRH-98				
27	Cylinder Front Alignment Pin	TRH-98-1				

* Not Illustrated.

QA1L High Torque Angle Fastener Clutches Exploded Diagram



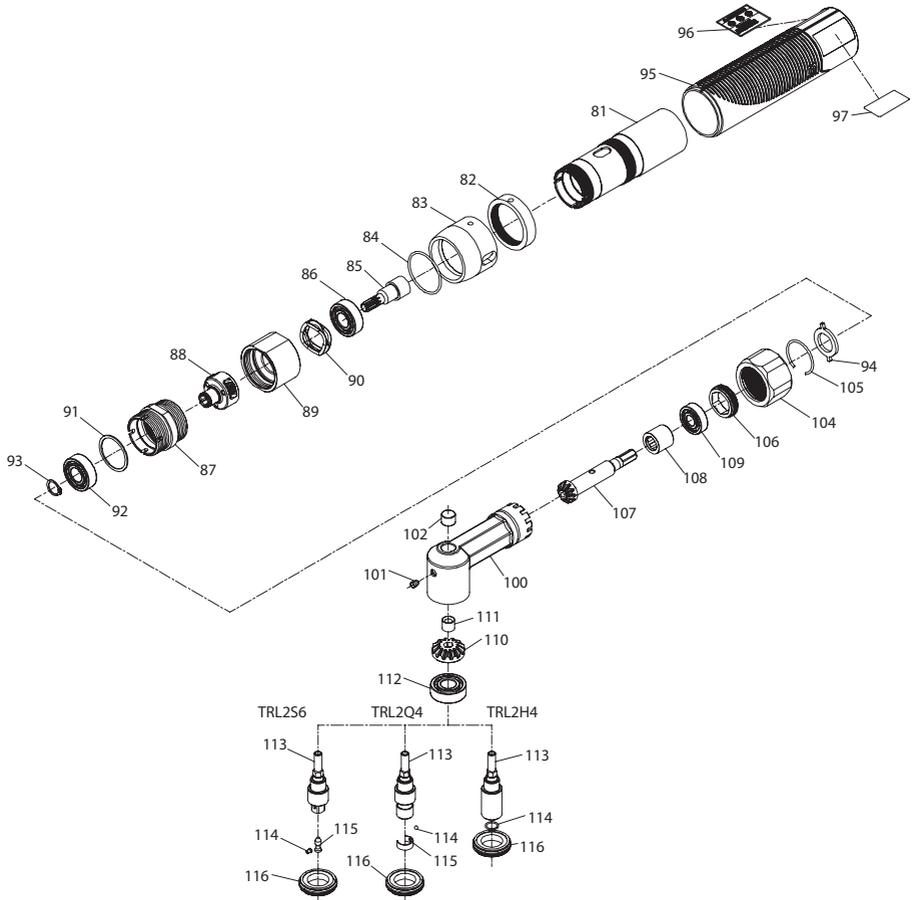
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QA1L High Torque Angle Fastener Clutches Parts List

Item	Part Description	Part Number	Item	Part Description	Part Number
	Automatic Shutoff Clutch Assembly			Cushion Clutch Assembly	
	with medium clutch spring (standard)	TRH-AM579		with medium clutch spring (standard)	TRH-AM579-C
	with light clutch spring	TRH-AL579		with light clutch spring	TRH-AL579-C
46	Clutch Return Spring	TRH-405	65	Clutch Return Spring	TRH-405
47	Clutch Input Driver	TRH-103	66	Clutch Input Driver	TRH-103
48	Automatic Shutoff Plunger	TRH-408	67	Clutch Pushrod	TRH-236-C
49	Automatic Shutoff Plunger Return Spring	TRH-420	68	Clutch Shaft	TRH-502
50	Automatic Shutoff Pin	TRH-704	69	Clutch Ball (1/8" diameter) (12)	AV1-255
51	Automatic Shutoff Pin Spring	TRH-407	70	Cam Jaw	TRH-721-C
52	Clutch Shaft	TRH-502	71	Clutch Cam Ball Driver	TRH-581-C
53	Clutch Ball (1/8" diameter) (12)	AV1-255	72	Clutch Cam Ball (1/8" diameter) (11)	AV1-255
54	Cam Jaw	TRH-721	73	Clutch Cam Ball Driver Retaining Pin	TRH-188
55	Clutch Cam Ball Driver	TRH-581	74	Cam Ball Seat	TRH-627-C
56	Clutch Cam Ball (1/4" diameter) (3)	4U-722	75	Clutch Spring	
57	Clutch Driver Retaining Pin	TRH-188		medium (red)	TRH-M583
58	Cam Ball Seat	TRH-627		light (yellow)	TRH-L583
59	Clutch Spring		76	Spring Seat	TRH-623
	medium (red)	TRH-M583	77	Thrust Bearing	161A32-105
	light (yellow)	TRH-L583	78	Clutch Adjusting Nut Washer	TRH-582
60	Spring Seat	TRH-623	79	Clutch Adjusting Nut	TRH-588
61	Thrust Bearing	161A32-105	80	Clutch Adjusting Nut Stop	353-701
62	Clutch Adjusting Nut Washer	TRH-582	*	Cushion Clutch Tune-Up Kit (Includes the following items: 65, 67, 69, 72, 73, 76, 77 and 80)	Q2-CC-TK1
63	Clutch Adjusting Nut	TRH-588			
64	Clutch Adjusting Nut Stop	353-701			
*	Automatic Shutoff Tune-Up Kit (Includes the following items: 35, 46, 49, 51, 53, 56, 57, 61 and 64)	Q2-AS0-TK1			

* Not Illustrated.

QA1L High Torque Grip, Gearing and Angle Attachments Exploded Diagram



(Dwg. TPA1827)

QA1L High Torque Grip, Gearing and Angle Attachments Parts List

Item	Part Description	Part Number	Item	Part Description	Part Number
81	Clutch Housing	TRL-580	104	Coupling Nut	TRL-27
82	Grip Retaining Nut	TRL-40-305	105	Coupling Nut Retainer	TRL-29
83	Clutch Adjusting Hole Cover	TRL-415	106	Angle Head Plug	TRL1-532
84	Cover O-Ring	TRL-415-272	107	Bevel Pinion	TRL2-552
85	Angle Wrench Drive Adapter	TRL-212	108	Pinion Front Bearing	H54U-511B
86	Drive Adapter Bearing	TRH-510	109	Pinion Rear Bearing	TRL-514
87	Front Gear Case	TAL-37-5	110	Bevel Gear	TRL2-551
88	Intermediate Spindle Assembly	TRH-A8-12	111	Bevel Gear Retainer	TRL2-578
89	Front Gear Case Coupler	TRL-304	112	Spindle Lower Bearing	R00B1-510
90	Thrust Washer	TRL-80	113	Spindle	
91	Spindle Bearing Seat	TRH-208		for TRL2S6	TRL2-A607-S6
92	Intermediate Spindle Bearing	TRH-510		for TRL2Q4	TRL2-A607-Q4
93	Spindle Bearing Retaining Ring	4E-6		for TRL2H4	TRL2-A607-H4
94	Housing Lock Spacer	TRL-682	114	Spindle Detent	
95	Grip Assembly	TRH-40-A135		for TRL2S6	30889
96	Nameplate	TRH-301		for TRL2Q4	R000B-263
97	Warning Label	TRH-99		for TRL2H4	38790
	Angle Housing Assembly		115	Detent Retainer	
	with 3/8" Square Drive	TRL2S6		for TRL2S6	30890
	with 1/4" Quick Change	TRL2Q4		for TRL2Q4	TRH-241
	with 1/4" Wire Detent Hex Bit Holder	TRL2H4	116	Lower Spindle Bearing Cap	120A4-531
100	Angle Housing	TRL2-A550	*	Spindle Bearing Cap Wrench	141A12-26
101	Grease Fitting	D0F9-879	*	Clutch Housing Spanner Wrench	TRH-478
102	Spindle Upper Bearing	TRL2-603			

* Not Illustrated.

Clutch Spring Selection Chart

Tool	Free Speed (rpm)	Torque Range (Soft Draw)	
		Light Clutch Spring (Yellow)	Medium Clutch Spring (Red)
All Series QA High Torque Angle Screwdrivers and Angle Wrenches	500	11.7 to 38.2 in-lbs. (1.32 to 4.32 Nm)	31.0 to 88.3 in-lbs. (3.50 to 9.98 Nm)
	250	11.7 to 38.2 in-lbs. (1.32 to 4.32 Nm)	31.0 to 88.3 in-lbs. (3.50 to 12.46 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:

Air Screwdriver Product Safety Information Manual 04585006.

Air Screwdriver Product Information Manual 80167406.

Air Screwdriver Product Maintenance Information Manual 16584062.

Manuals can be downloaded from www.irtools.com.

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