



**16572778**  
Edition 3  
May 2008

## **Air Drill**

**QA Series**

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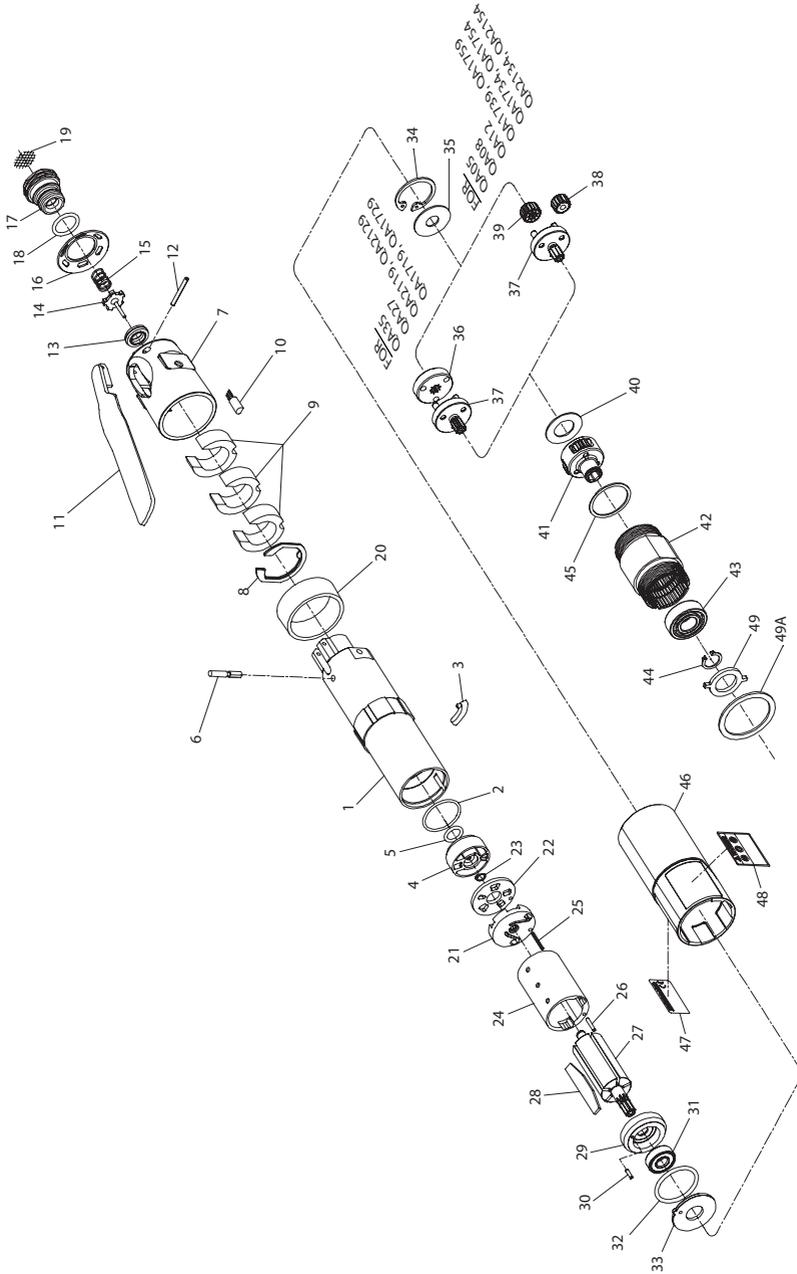
# **Parts Information**



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# QA Series Air Drill Motor and Gearing Exploded Diagram



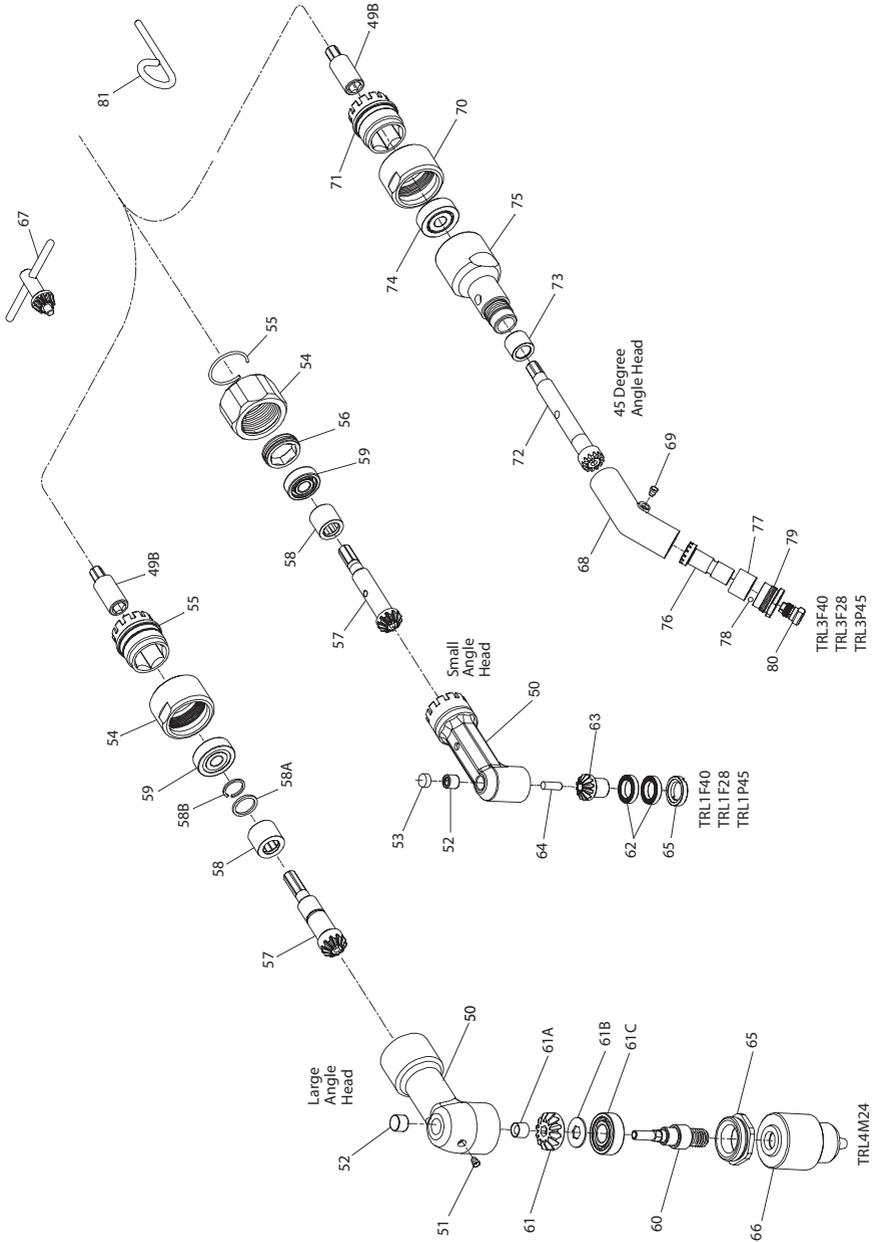
(Dwg. TPA1785-2)

## QA Series Air Drill Motor and Gearing Parts List

Item	Part Description	Part Number	Item	Part Description	Part Number
1	Motor Housing	TRL-40	38	Planet Gear (3 for each Gear Head)	
2	Housing O-Ring	TRH-104		for TRL1 angle heads with 1750 free speed; TRL3 angle heads with 2100 free speed and TRL4 angle heads with 1270 free speed	TRH-10-10
3	Housing Plug	TRD-982		for TRL1 angle heads with 1270 free speed; TRL3 angle heads with 1750 and 1270 free speeds and all angle heads 850 free speed	TRH-10-12
4	Reverse Valve Assembly	TRH-A3291		for all angle heads with 500 free speed	TRH-10-16
5	Reverse Valve Seal	R1A-159			
6	Throttle Plunger	TRL-302			
7	Back Cap	TRL-231			
8	Back Cap Gasket	TRL-A283			
9	Muffler Element (3)	TRL-311	39	Gear Head Pinion	
10	Memory Chip (only for models ending in D having a momery chip)	TRH-800		for TRL1 angle heads with 1270 free speed; TRL3 angle heads with 1750 and 1270 free speeds and TRL4 angle heads 850 free speed	TRH-17-18
11	Throttle Lever	TRL-273		for TRL1 angle heads with 1750 free speed; TRL3 angle heads with 2100 free speed and TRL4 angle heads with 1270 free speed	TRH-17-21
12	Throttle Lever Pin	TRL-98			
13	Throttle Valve Seat	TRH-303			
14	Throttle Valve	TRD-A302			
15	Throttle Valve Spring	TRL-51			
16	Exhaust Diffuser	TRH-123	40	Planet Gear Head Spacer	TRH-82
17	Inlet Bushing Assembly	TRH-A465	41	Spindle Assembly (includes all spindle gearing)	
18	Inlet Bushing Seal	AF120-290		for TRL1 angle heads with 2700, 2100 and 500 free speeds; TRL3 angle heads with 2700 and 500 free speeds and TRL4 angle heads with 2100 and 1750 free speeds	TRH-A8-16
19	Inlet Screen	TRH-61		for TRL1 angle heads with 3500 free speed; TRL3 angle heads with 3500 and 1270 free speeds and TRL4 angle heads with 2700, 850 and 500 free speeds	TRH-A8-15
20	Housing Plug Cover	TRD-981		for TRL1 angle heads with 1270 free speed	TRH-A8-14
21	Rear End Plate Assembly (includes rear rotor bearing)	TRH-A12-1		for TRL1 angle heads with 850 free speed; TRL3 angle heads with 1750, and 850 free speeds and TRL4 angle heads with 3500 and 1270 free speeds	TRH-A8-12
22	Rear End Plate Face Plate	TRH-12-2		for TRL1 angle heads with 1750 free speed; TRL3 angle heads with 2100 free speed	TRH-A8-10
23	Rear End Plate Assembly Retainer	85L-305			
24	Cylinder Assembly	TRH-A3-D			
25	Cylinder Rear Alignment Pin	TRH-98			
26	Cylinder Front Alignment Pin	TRH-98-1			
27	Rotor	TRD-53			
28	Vane Packet (set of 5 Vanes)	TRH-42-5			
29	Front End Plate Assembly	TRH-A11			
30	End Plate Alignment Pin	TRH-98-2			
31	Front Rotor Bearing	TRH-24			
32	Motor Seal	TRH-211	42	Gear Case	TAL-37
33	Motor Clamp Washer	TRH-207	43	Spindle Bearing Retaining Ring	TRH-510
34	Gear Retainer	TRH-28	44	Spindle Bearing Seat	4E-6
35	Gear Head Spacer	TRH-81	45	Spindle Bearing Seat	TRH-208
36	Planet Gear Head Drive Plate (for Series QA35 and QA27, and Models QA2119, QA2129, QA2139, QA2159, QA1719, and QA1729)	TRH-17	46	Housing Grip	TRH-40-A136
			47	Nameplate	TRH-301
			48	Warning Label	TRH-99
37	Planet Gear Head Assembly (includes gear shafts)		49	Housing Lock Spacer	TRL-682
	for TRL1 angle heads with 2700, 2100, 850, and 500 free speeds; TRL3 angle heads with 2700, 850, 500 free speeds and TRL4 angle heads with 3500, 2100, and 1750 free speeds	TRH-A2169-16	49A	Grip Spacer	TRL-504
	for TRL1 and TRL3 angle heads with 3500 free speeds and TRL4 angle heads with 2700 free speeds	TRH-A216-12	*	Tune-Up Kit (Includes the following items: 2, 5, 8, 9, 13, 14, 15, 18, 19, 23, 28, 30, 31 and 32)	Q2-TK1
	for TRL1 angle heads with 1750 free speed for TRL3 angle heads with 2100 free speed	TRH-A2169-10			
	for TRL1 angle heads with 1270 free speed	TRH-A216-15			
	for TRL3 angle heads with 1750 free speed and TRL4 angle heads with 1270 free speed	TRH-A2169-12			
	for TRL3 angle heads with 1270 free speed and TRL4 angle heads with 850 free speed	TRH-A21612-12			

\* Not Illustrated.

# QA Series Air Drill Angle Heads Exploded Diagram



(Dwg. TPA1824-1)

## QA Series Air Drill Angle Heads Parts List

Item	Part Description	Part Number	Item	Part Description	Part Number
49B	Shaft Coupler (for large and 45° angle heads)	TRL1-213	62	Spindle Lower Bearing	
	90° Angle Head Assembly			for small angle heads only (2)	TRL1-593
	for Models with large angle head and 3/8"-24 male thread for 1/4" drill chuck (Chuck not included in Assembly)	TRL4M24	63	Spindle	
				for TRL1F40 Angle Head Assembly	TRL1-551-F40
				for TRL1F28 Angle Head Assembly	TRL1-551-F28
	for Models with small angle head and 9/32"-40 female thread for collet (Collet not included in Assembly)	TRL1F40		for TRL1P45 Angle Head Assembly	TRL1-551-P45
	for Models with small angle head and 1/4"-28 female thread Spindle	TRL1F28	64	Spindle Upper Bearing Shaft	
50	Angle Housing			(for small angle heads only)	TRL1-110
	for large angle head	48203-1	65	Lower Spindle Bearing Cap	
	for small angle head	TRL1-550		for large angle head	48187-1
51	Grease Fitting (for large angle head only)	35967		for small angle head	TRL1-531
*	Angle Housing Cover (for large angle head only)	48192-1	66	Drill Chuck (for large angle heads only)	
52	Spindle Upper Bearing			1/4"	ROH-99
	for large angle head	46750		3/8"	6A-99
	for small angle head	W22-654	67	Drill Chuck Key	
53	Spindle Upper Bearing Cap (for small angle heads only)	TRL2-531		for ROH-99	R1H-J253
54	Coupling Nut			for 6A-99	ROJ-253
	for large angle head	48185-1		45° Angle Head Assembly	
	for small angle head	TRL-27		for Models with small angle head and 9/32"-40 female thread for 3/16" collet (Collet not included in Assembly)	TRL3F40
55	Coupling Nut Retainer			for Models with small angle head and 1/4"-28 female thread Spindle	TRL3F28
	for large angle head	TRL1-305	68	Angle Housing	43833-1
	for small angle head	TRL-29	69	Grease Fitting	35967
56	Angle Head Plug (for small angle heads only)	TRL1-532	70	Coupling Nut	48185-1
57	Bevel Pinion		71	Coupling Nut Retainer	TRL1-305
	for large angle head	48181-1	72	Bevel Pinion	48836-1
	for small angle head	TRL1-552	73	Pinion Front Bearing	46222
58	Pinion Front Bearing		74	Pinion Rear Bearing	Y65-8
	for large angle head	48202-1	75	Pinion Housing	48196-1
	for small angle head	TRL-654	76	Spindle	
58A	Bearing Spacer (for large angle head)	46742		for TRL3F40 Angle Head Assembly	48838-1
58B	Bearing Spacer Retainer (for large angle head)	Y110-5		for TRL3F28 Angle Head Assembly	48837-1
				for TRL3P45 Angle Head Assembly	48838-P45
			77	Spindle Lower Bearing	44424
59	Pinion Rear Bearing		78	Lower Spindle Bearing Cap Ball (11)	Y16-203
	for large angle head	Y65-8	79	Lower Spindle Bearing Cap	48840-1
	for small angle head	TRL-514	80	Collet Insert (for TRL3F40 Angle Head Assembly)	43497-169
60	Spindle Assembly (for TRL4M24 only)	48213-1	81	Wrench Pin	48182-1
61	Bevel Gear	46735	*	Suspension Bail	7L-365
61A	Bevel Gear Retainer	47600	*	Piped-Away Exhaust Kit (optional)	LG1-K284
61B	Bevel Gear Spacer	47694			
61C	Spindle Lower Bearing	Y65-13			

\* Not Illustrated.

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## **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.

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## **Related Documentation**

For additional information refer to:

Air Drill Product Safety Information Manual 04580353.

Air Drill Product Information Manual 16572158.

Air Drill Maintenance Information Manual 16572653.

Manuals can be downloaded from [www.irtools.com](http://www.irtools.com).



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