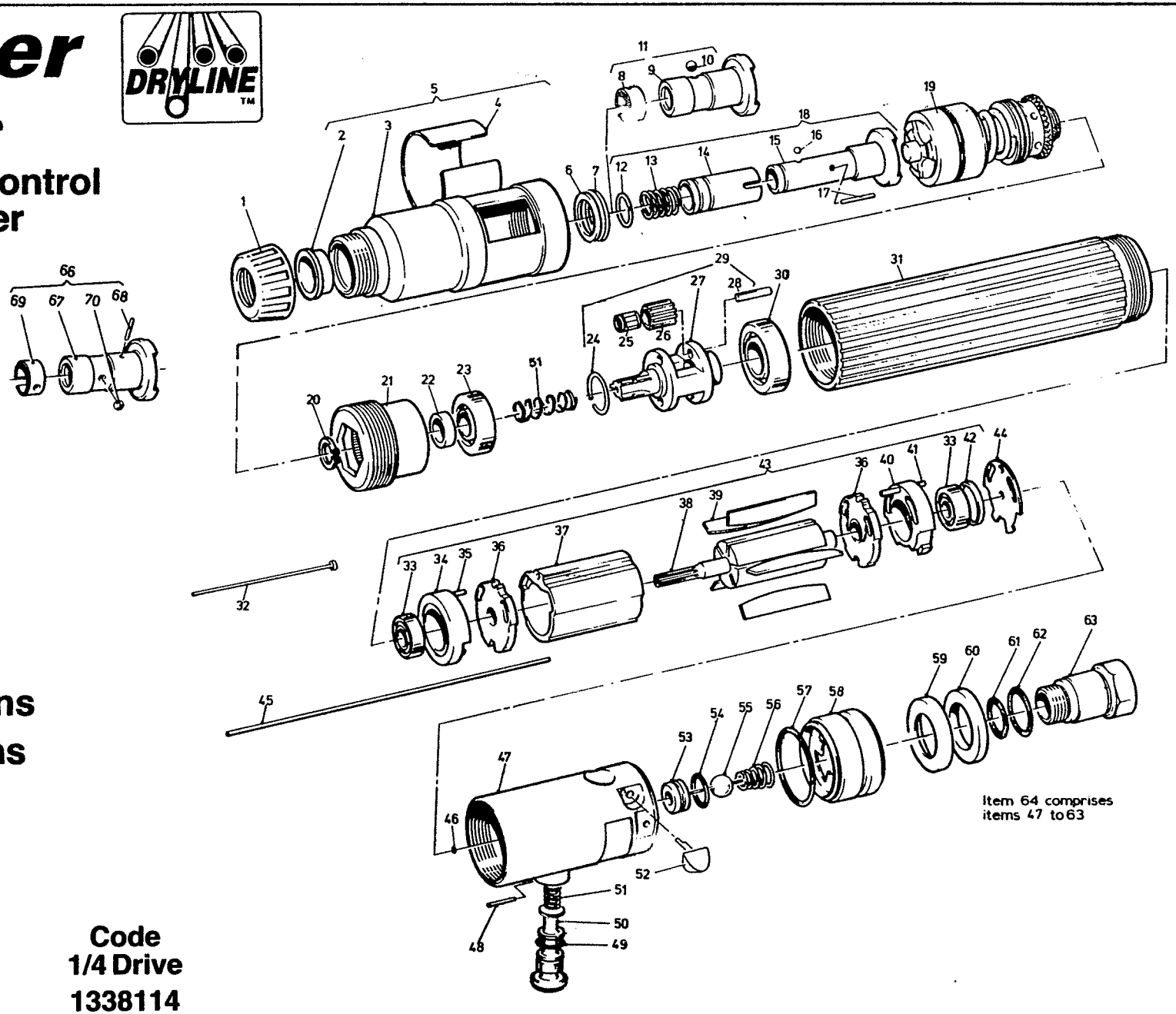
Desoutter D Series

Reversible Torque Control One Shot Screwdriver



Operating Instructions

Servicing Instructions

Parts List

Type	Code 5/16 Drive	Code 1/4 Drive
2D89-AX-2200	1338294	1338114

The following instructions for the motor complete (43) must be followed.

Take the rotor (38) and place the rear bearing plate (36) with grooves to rotor, into position. Press bearing (33) onto the rotor so that there is a 0.038mm (0.0015in) gap between the rotor and the rear bearing plate. Holding the rotor and rear bearing plate assembly with the gear end of the rotor uppermost, slide the cylinder (37) over the rotor.

Locate the rotor blades (39) into their slots in the rotor and lubricate. Place the front bearing plate (36) into position, with grooves to rotor. Press the front bearing (33) onto the rotor until all the free axial movement between the front and rear bearings is removed. Place the front bearing housing (34) over its bearing making sure that the location pin and hole are aligned.

Locate the rear bearing housing (40) with cap (42) and check that the rotor is free to rotate.

Final Assembly

Place control top in vice using flats as in dismantling, then place gasket (44) in position so that the pin location hole is clear. Remove the rear bearing housing (40) from the motor complete (43) and locate in the control top, load the rest of the motor into position then slide the motor case (31) over the motor and screw fully into the control top. Slide the planet cage assemblies into the motor case checking that as each assembly is located the unit is free to rotate, check that push-rods (32 & 45) are fitted and operate without binding.

Now tighten the nose to 40Nm (29.5 lbf.ft.) and replace spacer and circlip.

NOTE:

Now check setting dimension of push rod (32). This is done by measuring the distance from circlip (20) to tip of Push Rod (32) with ball held on its seat. The dimension should be 31.5-32mm. To adjust remove air inlet (63) and adjust position of ball on the rod bearing in mind the pitch is 0.35mm. Then rebuild front end of tool.

The tool should be connected to the air supply and tested for correct operation.

If the tool is to be used on a dry airline installation it should be run for a few minutes to clear any oil, used in assembly, from the motor.

2D89-AX-2200

Item No.	Part No.	Description	Qty.
1	74088	Thread Protection Cap	1
2	73798	Bearing Bush	2
3	298913	Clutch Case	1
4	161253	Spring Ring	1
5	301513	Clutch Case Complete	1
6	169053	Spacer 2.0mm	
	16906.	er 2.4mm	
	169073	Spacer 2.8mm	A/R
	169083	Spacer 3.2mm	
	169093	Spacer 3.5mm	
7	74970033	Shim 0.08mm	
	74970053	Shim 0.13mm	A/R
	74970103	Shim 0.25mm	
8	86058	Spring Ring	1
9	296643	Bit Holder 5/16" Hex	1
10	72408	Ball	1
11	298043	Bit Holder 5/16" Hex (complete)	1
*12	200083	Circlip	1
13	301013	Spring	1
14	301003	Sleeve	1
15	300983	Bit Holder 1/4" Hex	1
16	3543	Ball	1
17	301043	Roller	1
18	301023	Bit Holder 1/4" Hex (complete)	1
19	296713	Clutch complete	1
*20	42353	Circlip	1
21	269513	Gear and Nose	1
22	237333	Distance Collar	1
*23	178543	Bearing	1
*24	37423	Circlip	1
*25	502093	Needle Bearing	2
26	150813	Planet Wheel	2
27	218343	Planet Cage	1
*28	1453	Planet Pin	2
29	221683	Planet Cage Complete	1
*30	2413	Bearing	1
31	252953	Motor Case	1
32	301533	Push Rod	1
*33	33433	Bearing	2
34	254893	Front Bearing Housing	1
35	256123	Spring Pin	1
36	254873	Bearing Plate	2
37	254853	Cylinder	1
38	222033	Rotor	1
*39	300623	Rotor Blades 'Dryline'	5
40	254883	Rear Bearing Housing	1
*41	256123	Spring Pin	1
42	270493	End Cap	1
43	302633	Motor Complete	1
*44	253003	Gasket	1
45	301783	Push Rod	1

Item No.	Part No.	Description	Qty.
*46	221973	'O' Ring	1
47	261483	Control Top	1
48	259953	Spring Pin	1
*49	250913	'O' Ring	1
# 50	252543	Reversing Valve	1
# 51	252563	Spring	2
52	252983	Insert	2
53	252383	Valve Seat	1
*54	500953	'O' Ring	1
55	278833	Push Rod and Ball Assembly	1
56	252493	Spring	1
*57	203423	'O' Ring	1
58	252423	Silencer Housing	1
59	252483	Spacer	1
60	252453	Sintered Silencer	1
*61	202313	'O' Ring	1
*62	268513	'O' Ring	1
63	261503	Inlet Adaptor — ¼in BSP	1
—	261513	Inlet Adaptor — ¼in NPT	1
64	261433	Control Top Complete ¼" BSP	1
	261443	Control Top Complete ¼"NPT	1
		Optional Accessory	
66	296973	Bit Holder ¼" Hex (complete)	1
67	296633	Bit Holder ¼" Hex	1
68	256763	Spring Pin	1
69	86058	Spring Ring	1
70	66868	Ball 5/32" dia.	1
		Supplied Accessories	
—	29932	Clutch Key	1
—	39433	Suspension Bail	1
—	222453	Exhaust Hose	1
—	—	Clutch Spring — next in series to extend torque range of tool	1

* Indicates normal replacement items. It is recommended that adequate stocks are held for servicing requirements.

# Indicates updated parts.

Always quote tool model number, serial number and spare part number when ordering spares.

Desoutter

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REQUIREMENTS

Air Supply

A water free and filtered air supply is required at a pressure of 6 bar (87 lbf/in^2), with a flow of 8.4 l/s (18 scfm); controlled by a pressure regulator selected from the Desoutter Air Line Service Equipment Catalogue.

Lubrication

This is a DRYLINE tool designed to operate on a totally dry airline i.e., one without any oil or water moisture. The speed of the tool when operated dry will be found to be 10% lower than that stated on the tool nameplate; this will not alter the overall performance.

DRYLINE tools can also operate on a lubricated or partly lubricated airline thus allowing easy tool interchangeability with existing installations. If lubrication is required an airline lubricator should be fitted down stream of the filter.

Desoutter recommend the use of an ISO Viscosity Classified Oil, grade number ISO VG 15, in the lubricator.

Accessories

A wide range of screwdriving bits and nutrunning sockets are available and a suitable item should be selected from the Desoutter Accessories Catalogue.

The retention of these items is by spring loaded ball, which requires a sharp pull to release for the 5/16 in bit holder, or by pulling the sleeve forward to release for the 1/4 in bit holder.

OPERATING

With the correct accessory fitted connect the tool to the air supply. Grip the tool around the motor case and press the tool onto the fixing that is to be tightened; the motor will start and tighten the fixing to the required torque, set by adjusting the tension on the clutch spring, at this point the internal drive is disengaged and the air to the motor cut off.

To engage reverse rotation press the reverse button and rotate it to lock in position.

NOTE: With the same clutch setting a higher torque is always transmitted in reverse, ensuring a speedy fastener removal.

WARNING

1) Always disconnect tool from the power supply before attempting any replacement, adjustment, servicing or dismantling.

2) Ensure that no loose articles of clothing or cleaning material can be caught by the rotating parts of the tool.

3) Always allow the tool to stop before removing work or resting tool.

4) Ensure that work piece is securely clamped before commencement of operation — clear all loose items from vicinity.

INITIAL SETTING

When received the torque output of the tool will require setting to match the job requirement.

It is recommended that a trial tightening operation is carried out to determine the amount of adjustment required. The ideal instrument for checking the torque is an electronic torque meter, request information from Desoutter; failing this a dial indicating torque wrench is adequate.

Clutch Adjustment

Rotate the spring ring (4) to uncover access hole in clutch case (3); insert clutch key, supplied with tool, and rotate to obtain the required torque.

SERVICING REQUIREMENTS

General Notes

Replace as necessary all 'O' rings, gaskets, bearings and rotor blades.

Use the foillowing lubricants:

Oil — ISO Viscosity Classified — ISO VG 15, for motor.
Grease — BP FG00-EP, for motor bearings.
Grease — Duckhams Type Q5618, for gears and other bearings.
Silicone Grease — Molykote 33, for 'O' rings.

ATTENTION:

The rotor blades in this tool have a PTFE content. The normal Health and Safety recommendations concerning PTFE must be observed when handling these rotor blades.

1. Do not smoke.

2. Motor components must be washed with cleaning fluid and not blown clear with an air line.

3. Sintered silencers must be replaced when dirty, do not clean and re-use.

4. Wash hands before commencing any other activity.

Bearings that have a retainer holding the balls in place must be assembled into the tool with the blank face of the retainer to the air flow; in the case of the motor the blank faces must face each other across the rotor.

The threads in this tool are left hand with the exception of the air inlet adaptor.

Customers wishing to service the clutch (19) should request a separate service sheet from Desoutters.

TO DISMANTLE

Clamp tool in Vice using Flats on Control top. Unscrew Clutch Housing (5) and remove clutch (19) and output Drive (11).

Remove Circlip (20) and spacer (22) from final Planet Cage (29) and insert tool into Gear and Nose (21). Then loosen.

Remove tool from Vice then holding the tool unscrew the Control Top (64) and remove Motor (43) and planet cage complete (29).

Passing through the motor and gearbox are push-rods, these should now be inspected for straightness and stored for future assembly.

The remainder of the dismantling follows normal engineering practice with reference to the illustration.

TO ASSEMBLE

Assembly Notes:

1) When locating the motor complete (43) in the control top complete (64), the pin projecting out of rear bearing housing complete (40) must enter the location hole in the control top.

2) It is important that spacer (59) is located the correct way round: concave side to the rear of the tool.

3) The push-rod and ball assembly (55) is the point of adjustment for the push-rods (32 & 45). To check for correct assembly of the push-rods, see final Assembly Notes.

Sub Assemblies

Using the illustration as a guide, assemble control and planet cages. The push-rods (32 & 45) must be positioned while there is free access for them.

Desoutter D Series

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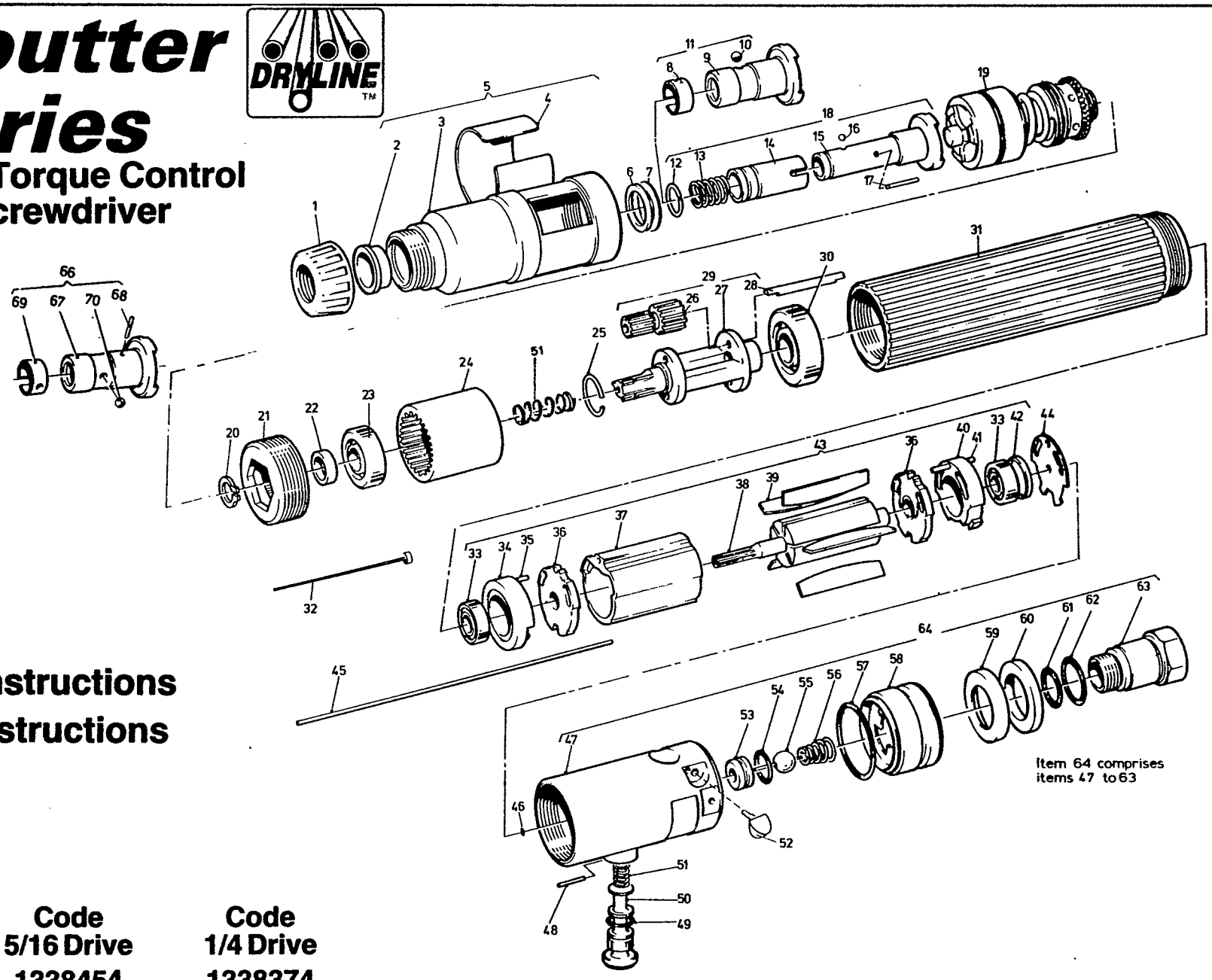

Operating Instructions

Servicing Instructions

Parts List

Type	Code 5/16 Drive	Code 1/4 Drive
2D89-AX-1500	1338454	1338374

Take the rotor (38) and place the rear bearing plate (36) with grooves to rotor, into position. Press bearing (33) onto the rotor so that there is a 0.038mm (0.0015in) gap between the rotor and the rear bearing plate. Holding the rotor and rear bearing plate assembly with the gear end of the rotor uppermost, slide the cylinder (37) over the rotor.

Locate the rotor blades (39) into their slots in the rotor and lubricate. Place the front bearing plate (36) into position, with grooves to rotor. Press the front bearing (33) onto the rotor until all the free axial movement between the front and rear bearings is removed. Place the front bearing housing (34) over its bearing making sure that the location pin and hole are aligned.

Locate the rear bearing housing (40) with cap (42) and check that the rotor is free to rotate.

Final Assembly

Place control top in vice using flats as in dismantling, then place gasket (44) in position so that the pin location hole is clear. Remove the rear bearing housing (40) from the motor complete (43) and locate in the control top, load the rest of the motor into position then slide the motor case (31) over the motor and screw fully into the control top. Slide the planet cage assemblies into the motor case checking that as each assembly is located the unit is free to rotate, check that push-rods (32 & 45) are fitted and operate without binding.

Now tighten the nose to 40Nm (29.5 lbf.ft.) and replace spacer and circlip.

NOTE:

Now check setting dimension of push rod (32). This is done by measuring the distance from circlip (20) to tip of Push Rod (32) with ball held on its seat. The dimension should be 31.5-32mm.

To adjust remove air inlet (63) and adjust position of ball on the rod bearing in mind the pitch is 0.35mm. Then rebuild front end of tool.

The tool should be connected to the air supply and tested for correct operation.

If the tool is to be used on a dry airline installation it should be run for a few minutes to clear any oil, used in assembly, from the motor.

2D89-AX-1500

Item No.	Part No.	Description	Qty.
1	74088	Thread Protection Cap	1
2	73798	Bearing Bush	2
3	298913	Clutch Case	1
4	161253	Spring Ring	1
5	301513	Clutch Case Complete	1
6	169053	Spacer 2.0mm	
	169063	Spacer 2.4mm	
	169073	Spacer 2.8mm	A/R
	169083	Spacer 3.2mm	
	169093	Spacer 3.5mm	
7	74970033	Shim 0.08mm	
	74970053	Shim 0.13mm	A/R
	74970103	Shim 0.25mm	
8	86058	Spring Ring	1
9	296643	Bit Holder 5/16" Hex	1
10	72408	Ball	1
11	298043	Bit Holder 5/16" Hex (complete)	1
*12	200083	Circlip	1
13	301013	Spring	1
14	301003	Sleeve	1
15	300983	Bit Holder 1/4" Hex	1
16	3543	Ball	1
17	301043	Roller	1
18	301023	Bit Holder 1/4" Hex (complete)	1
19	296713	Clutch complete	1
*20	42353	Circlip	1
21	252943	Bearing Housing	1
22	237333	Distance Collar	1
*23	178543	Bearing	1
*24	41703	Gear Ring	1
*25	25563	Circlip	1
26	41683	Planet Wheel	2
27	237723	Planet Cage	1
28	41693	Planet Pin	2
29	237733	Planet Cage Complete	1
*30	2413	Bearing	1
31	252963	Motor Case	1
32	301543	Push Rod	1
*33	33433	Bearing	2
34	254893	Front Bearing Housing	1
35	256123	Spring Pin	1
36	254873	Bearing Plate	2
37	254853	Cylinder	1
38	222043	Rotor	1
*39	300623	Rotor Blades 'Dryline'	5
40	254883	Rear Bearing Housing	1
*41	256123	Spring Pin	1

Item No.	Part No.	Description	Qty.
42	270493	End Cap	1
43	302623	Motor Complete	1
*44	253003	Gasket	1
45	301783	Push Rod	1
*46	221973	'O' Ring	1
47	261483	Control Top	1
48	259953	Spring Pin	1
*49	250913	'O' Ring	1
#50	252543	Reversing Valve	1
#51	252563	Spring	2
52	252983	Insert	2
53	252383	Valve Seat	1
*54	500953	'O' Ring	1
55	278833	Push Rod and Ball Assembly	1
56	252493	Spring	1
*57	203423	'O' Ring	1
58	252423	Silencer Housing	1
59	252483	Spacer	1
60	252453	Sintered Silencer	1
*61	202313	'O' Ring	1
*62	268513	'O' Ring	1
63	261503	Inlet Adaptor — ¼in BSP	1
—	261513	Inlet Adaptor — ¼in NPT	1
64	261433	Control Top Complete ¼" BSP	1
	261443	Control Top Complete ¼"NPT	1
65	120063	'Dryline' Self Adhesive Label	1
		Optional Accessory	
66	296973	Bit Holder ¼" Hex (complete)	1
67	296633	Bit Holder ¼" Hex	1
68	256673	Spring Pin	1
69	86058	Spring Ring	1
70	66868	Ball 5/32" dia.	1
		Supplied Accessories	
—	29932	Clutch Key	1
—	39433	Suspension Bail	1
—	222453	Exhaust Hose	1
—	—	Clutch Spring — next in series to extend torque range of tool	1

* Indicates normal replacement items. It is recommended that adequate stocks are held for servicing requirements.

# Indicates updated parts.

Always quote tool model number, serial number and spare part number when ordering spares.

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REQUIREMENTS

Air Supply

A water free and filtered air supply is required at a pressure of 6 bar (87 lbf/in^2), with a flow of 8.4 l/s (18 scfm); controlled by a pressure regulator selected from the Desoutter Air Line Service Equipment Catalogue.

Lubrication

This is a DRYLINE tool designed to operate on a totally dry airline i.e., one without any oil or water moisture. The speed of the tool when operated dry will be found to be 10% lower than that stated on the tool nameplate; this will not alter the overall performance.

DRYLINE tools can also operate on a lubricated or partly lubricated airline thus allowing easy tool interchangeability with existing installations. If lubrication is required an airline lubricator should be fitted down stream of the filter.

Desoutter recommend the use of an ISO Viscosity Classified Oil, grade number ISO VG 15, in the lubricator.

Accessories

A wide range of screwdriving bits and nutrunning sockets are available and a suitable item should be selected from the Desoutter Accessories Catalogue.

The retention of these items is by spring loaded ball, which requires a sharp pull to release for the 5/16 in bit holder, or by pulling the sleeve forward to release for the 1/4 in bit holder.

OPERATING

With the correct accessory fitted connect the tool to the air supply. Grip the tool around the motor case and press the tool onto the fixing that is to be tightened; the motor will start and tighten the fixing to the required torque, set by adjusting the tension on the clutch spring, at this point the internal drive is disengaged and the air to the motor cut off.

To engage reverse rotation press the reverse button and rotate it to lock in position.

NOTE: With the same clutch setting a higher torque is always transmitted in reverse, ensuring a speedy fastener removal.

WARNING

1) Always disconnect tool from the power supply before attempting any replacement, adjustment, servicing or dismantling.

2) Ensure that no loose articles of clothing or cleaning material can be caught by the rotating parts of the tool.

3) Always allow the tool to stop before removing work or resting tool.

4) Ensure that work piece is securely clamped before commencement of operation — clear all loose items from vicinity.

INITIAL SETTING

When received the torque output of the tool will require setting to match the job requirement.

It is recommended that a trial tightening operation is carried out to determine the amount of adjustment required. The ideal instrument for checking the torque is an electronic torque meter, request information from Desoutter; failing this a dial indicating torque wrench is adequate.

Clutch Adjustment

Rotate the spring ring (4) to uncover access hole in clutch case (3); insert clutch key, supplied with tool, and rotate to obtain the required torque.

SERVICING REQUIREMENTS

General Notes

Replace as necessary all 'O' rings, gaskets, bearings and rotor blades.

Use the foillowing lubricants:

Oil — ISO Viscosity Classified — ISO VG 15, for motor.
Grease — BP FG00-EP, for motor bearings.
Grease — Duckhams Type Q5618, for gears and other bearings.
Silicone Grease — Molykote 33, for 'O' rings.

ATTENTION:

The rotor blades in this tool have a PTFE content. The normal Health and Safety recommendations concerning PTFE must be observed when handling these rotor blades.

1. Do not smoke.
2. Motor components must be washed with cleaning fluid and not blown clear with an air line.
3. Sintered silencers must be replaced when dirty, do not clean and re-use.
4. Wash hands before commencing any other activity.

Bearings that have a retainer holding the balls in place must be assembled into the tool with the blank face of the retainer to the air flow; in the case of the motor the blank faces must face each other across the rotor.

The threads in this tool are left hand with the exception of the air inlet adaptor.

Customers wishing to service the clutch (19) should request a separate service sheet from Desoutters.

TO DISMANTLE

Clamp tool in Vice using Flats on Control top. Unscrew Clutch Housing (5) and remove clutch (19) and output Drive (11).

Remove Circlip (20) and spacer (22) from final Planet Cage (29) and insert tool into Gear and Nose (21). Then loosen.

Remove tool from Vice then holding the tool unscrew the Control Top (64) and remove Motor (43) and planet cage complete (29).

Passing through the motor and gearbox are push-rods, these should now be inspected for straightness and stored for future assembly.

The remainder of the dismantling follows normal engineering practice with reference to the illustration.

TO ASSEMBLE

Assembly Notes:

1) When locating the motor complete (43) in the control top complete (64), the pin projecting out of rear bearing housing complete (40) must enter the location hole in the control top.

2) It is important that spacer (59) is located the correct way round: concave side to the rear of the tool.

3) The push-rod and ball assembly (55) is the point of adjustment for the push-rods (32 & 45). To check for correct assembly of the push-rods, see final Assembly Notes.

Sub Assemblies

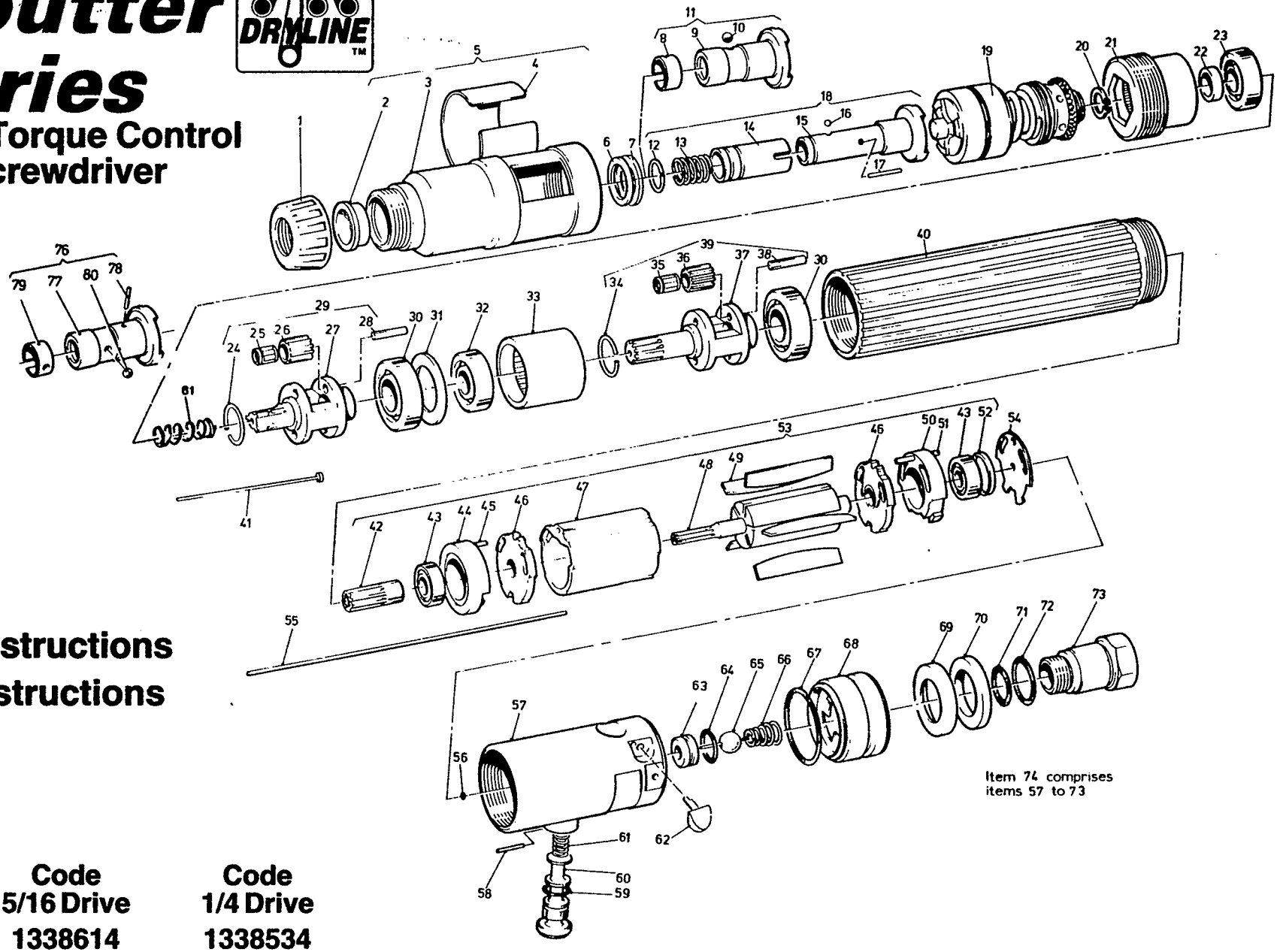
Using the illustration as a guide, assemble control and planet cages. The push-rods (32 & 45) must be positioned while there is free access for them.

The following instructions for the motor complete (43) must be followed.

Desoutter D Series

DRYLINE™

Reversible Torque Control One Shot Screwdriver



Operating Instructions

Servicing Instructions

Parts List

Type	Code 5/16 Drive	Code 1/4 Drive
2D89-AX-1000	1338614	1338534

Take the rotor (48) and place the rear bearing plate (46) with grooves to rotor, into position. Press bearing (43) onto the rotor so that there is a 0.038mm (0.0015in) gap between the rotor and the rear bearing plate. Holding the rotor and rear bearing plate assembly with the gear end of the rotor uppermost, slide the cylinder (47) over the rotor.

Locate the rotor blades (49) into their slots in the rotor and lubricate. Place the front bearing plate (46) into position, with grooves to rotor. Press the front bearing (43) onto the rotor until all the free axial movement between the front and rear bearings is removed. Place the front bearing housing (44) over its bearing making sure that the location pin and hole are aligned.

Locate the rear bearing housing (50) with cap (52) and check that the rotor is free to rotate.

Final Assembly

Place control top in vice using flats as in dismantling, then place gasket (54) in position so that the pin location hole is clear. Remove the rear bearing housing (50) from the motor complete (53) and locate in the control top, load the rest of the motor into position then slide the motor case (40) over the motor and screw fully into the control top. Slide the planet cage assemblies into the motor case checking that as each assembly is located the unit is free to rotate, check that push-rods (41 & 55) are fitted and operate without binding.

Now tighten the nose to 40Nm (29.5 lbf.ft.) and replace spacer and circlip.

NOTE:

Now check setting dimension of push rod (41). This is done by measuring the distance from circlip (20) to tip of Push Rod (41) with ball held on its seat. The dimension should be 31.5-32mm. To adjust remove air inlet (73) and adjust position of ball on the rod bearing in mind the pitch is 0.35mm. Then rebuild front end of tool.

The tool should be connected to the air supply and tested for correct operation.

If the tool is to be used on a dry airline installation it should be run for a few minutes to clear any oil, used in assembly, from the motor.

2D89-AX-1000

Item No.	Part No.	Description	Qty.
1	74088	Thread Protection Cap	1
2	73798	Bearing Bush	2
3	298913	Clutch Case	1
4	161253	Spring Ring	1
5	301513	Clutch Case Complete	1
6	169053	Spacer 2.0mm	
	169063	Spacer 2.4mm	
	169073	Spacer 2.8mm	A/R
	169083	Spacer 3.2mm	
	169093	Spacer 3.5mm	
7	74970033	Shim 0.08mm	
	74970053	Shim 0.13mm	A/R
	74970103	Shim 0.25mm	
8	86058	Spring Ring	1
9	296643	Bit Holder 5/16" Hex	1
10	72408	Ball	1
11	298043	Bit Holder 5/16" Hex (complete)	1
*12	200083	Circlip	1
13	301013	Spring	1
14	301003	Sleeve	1
15	300983	Bit Holder 1/4" Hex	1
16	3543	Ball	1
17	301043	Roller	1
18	301023	Bit Holder 1/4" Hex (complete)	1
19	297023	Clutch complete	1
*20	42353	Circlip	1
21	268973	Gear and Nose	1
22	237333	Distance Collar	1
*23	178543	Bearing	1
*24	41623	Circlip	1
25	Number not used		
26	42293	Planet Wheel	2
27	222123	Planet Cage	1
*28	80013	Planet Pin	2
29	222083	Planet Cage Complete	1
*30	2413	Bearing	2
31	37623	Washer	1
*32	2423	Bearing	1
33	36713	Ring Gear	1
*34	25573	Circlip	1
*35	502093	Needle Bearing	2
36	65383	Planet Wheel	2
37	237313	Planet Cage	1
*38	1453	Planet Pin	2
39	237323	Planet Cage Complete	1
40	252973	Motor Case	1
41	301533	Push Rod	1
42	65373	Pinion	1
*43	33433	Bearing	2
44	254893	Front Bearing Housing	1
45	256123	Spring Pin	1
46	254873	Bearing Plate	2
47	254853	Cylinder	1
48	237373	Rotor	1
*49	300623	Rotor Blades 'Dryline'	5
50	254883	Rear Bearing Housing	1
*51	256123	Spring Pin	1
52	270493	End Cap	1

Item No.	Part No.	Description	Qty.
53	302653	Motor Complete	1
*54	253003	Gasket	1
55	301793	Push Rod	1
*56	221973	'O' Ring	1
57	261483	Control Top	1
58	259953	Spring Pin	1
*59	250913	'O' Ring	1
#60	252543	Reversing Valve	1
#61	252563	Spring	2
62	252983	Insert	2
63	252383	Valve Seat	1
*64	500953	'O' Ring	1
65	278833	Push Rod and Ball Assembly	1
66	252493	Spring	1
*67	203423	'O' Ring	1
68	252423	Silencer Housing	1
69	252483	Spacer	1
70	252453	Sintered Silencer	1
*71	202313	'O' Ring	1
*72	268513	'O' Ring	1
73	261503	Inlet Adaptor — ¼in BSP	1
—	261513	Inlet Adaptor — ¼in NPT	1
74	261433	Control Top Complete ¼" BSP	1
	261443	Control Top Complete ¼"NPT	1
		Optional Accessory	
76	296973	Bit Holder ¼" Hex (complete)	1
77	296633	Bit Holder ¼" Hex	1
78	256763	Spring Pin	1
79	86058	Spring Ring	1
80	66868	Ball 5/32" dia.	1
		Supplied Accessories	
—	29932	Clutch Key	1
—	39433	Suspension Bail	1
—	222453	Exhaust Hose	1
—	—	Clutch Spring — next in series to extend torque range of tool	1

* Indicates normal replacement items. It is recommended that adequate stocks are held for servicing requirements.

# Indicates updated parts

Always quote tool model number, serial number and spare part number when ordering spares.

Desoutter

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319 Edgware Road, Colindale, London NW9 6ND.
Telephone: 081-205 7050 *Telex: 21392*
Fax: 081-205 5167

Printed in England 4.90

2D89-AX-1000

REQUIREMENTS

Air Supply

A water free and filtered air supply is required at a pressure of 6 bar (87 lbf/in^2), with a flow of 8.4 l/s (18 scfm); controlled by a pressure regulator selected from the Desoutter Air Line Service Equipment Catalogue.

Lubrication

This is a DRYLINE tool designed to operate on a totally dry airline i.e., one without any oil or water moisture. The speed of the tool when operated dry will be found to be 10% lower than that stated on the tool nameplate; this will not alter the overall performance.

DRYLINE tools can also operate on a lubricated or partly lubricated airline thus allowing easy tool interchangeability with existing installations. If lubrication is required an airline lubricator should be fitted down stream of the filter.

Desoutter recommend the use of an ISO Viscosity Classified Oil, grade number ISO VG 15, in the lubricator.

Accessories

A wide range of screwdriving bits and nutrunning sockets are available and a suitable item should be selected from the Desoutter Accessories Catalogue.

The retention of these items is by spring loaded ball, which requires a sharp pull to release for the 5/16 in bit holder, or by pulling the sleeve forward to release for the 1/4 in bit holder.

OPERATING

With the correct accessory fitted connect the tool to the air supply. Grip the tool around the motor case and press the tool onto the fixing that is to be tightened; the motor will start and tighten the fixing to the required torque, set by adjusting the tension on the clutch spring, at this point the internal drive is disengaged and the air to the motor cut off.

To engage reverse rotation press the reverse button and rotate it to lock in position.

NOTE: With the same clutch setting a higher torque is always transmitted in reverse, ensuring a speedy fastener removal.

WARNING

1) Always disconnect tool from the power supply before attempting any replacement, adjustment, servicing or dismantling.

2) Ensure that no loose articles of clothing or cleaning material can be caught by the rotating parts of the tool.

3) Always allow the tool to stop before removing work or resting tool.

4) Ensure that work piece is securely clamped before commencement of operation — clear all loose items from vicinity.

INITIAL SETTING

When received the torque output of the tool will require setting to match the job requirement.

It is recommended that a trial tightening operation is carried out to determine the amount of adjustment required. The ideal instrument for checking the torque is an electronic torque meter, request information from Desoutter; failing this a dial indicating torque wrench is adequate.

Clutch Adjustment

Rotate the spring ring (4) to uncover access hole in clutch case (3); insert clutch key, supplied with tool, and rotate to obtain the required torque.

SERVICING REQUIREMENTS

General Notes

Replace as necessary all 'O' rings, gaskets, bearings and rotor blades.

Use the foillowing lubricants:

Oil — ISO Viscosity Classified — ISO VG 15, for motor.
Grease — BP FG00-EP, for motor bearings.
Grease — Duckhams Type Q5618, for gears and other bearings.
Silicone Grease — Molykote 33, for 'O' rings.

ATTENTION:

The rotor blades in this tool have a PTFE content. The normal Health and Safety recommendations concerning PTFE must be observed when handling these rotor blades.

1. Do not smoke.
2. Motor components must be washed with cleaning fluid and not blown clear with an air line.
3. Sintered silencers must be replaced when dirty, do not clean and re-use.
4. Wash hands before commencing any other activity.

Bearings that have a retainer holding the balls in place must be assembled into the tool with the blank face of the retainer to the air flow; in the case of the motor the blank faces must face each other across the rotor.

The threads in this tool are left hand with the exception of the air inlet adaptor.

Customers wishing to service the clutch (19) should request a separate service sheet from Desoutters.

TO DISMANTLE

Clamp tool in Vice using Flats on Control top. Unscrew Clutch Housing (5) and remove clutch (19) and output Drive (11).

Remove Circlip (20) and spacer (22) from final Planet Cage (29) and insert tool into Gear and Nose (21). Then loosen.

Remove tool from Vice then holding the tool unscrew the Control Top (74) and remove Motor (53) and planet cage complete (39).

Passing through the motor and gearbox are push-rods, these should now be inspected for straightness and stored for future assembly.

The remainder of the dismantling follows normal engineering practice with reference to the illustration.

TO ASSEMBLE

Assembly Notes:

1) When locating the motor complete (53) in the control top complete (74), the pin projecting out of rear bearing housing complete (50) must enter the location hole in the control top.

2) It is important that spacer (69) is located the correct way round: concave side to the rear of the tool.

3) The push-rod and ball assembly (65) is the point of adjustment for the push-rods (41 & 55). To check for correct assembly of the push-rods, see final Assembly Notes.

Sub Assemblies

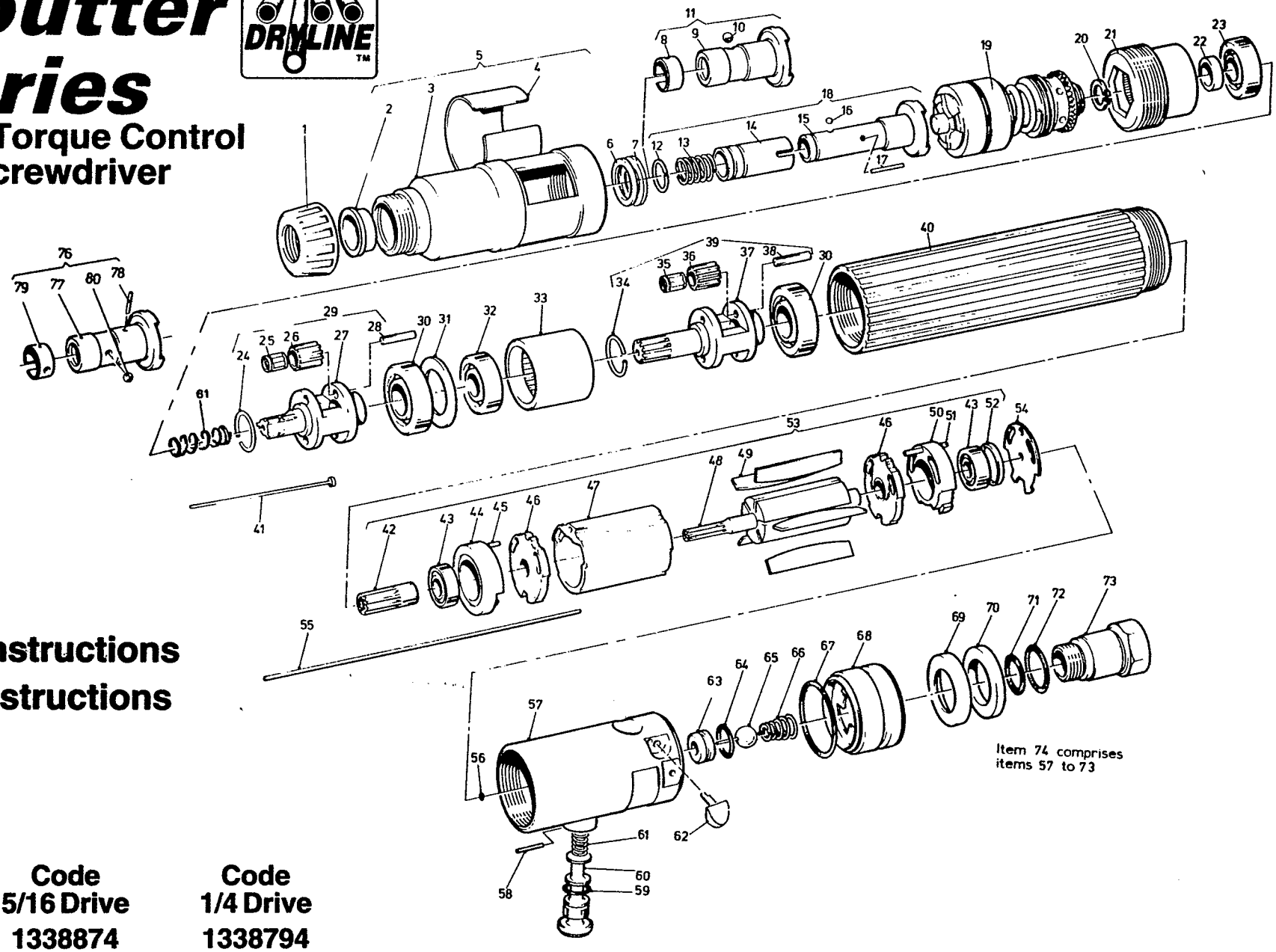
Using the illustration as a guide, assemble control and planet cages. The push-rods (41 & 55) must be positioned while there is free access for them.

The following instructions for the motor complete (53) must be followed.

Desoutter D Series

DRYLINE™

Reversible Torque Control One Shot Screwdriver



Operating Instructions
Servicing Instructions
Parts List

Type	Code 5/16 Drive	Code 1/4 Drive
2D89-AX-600	1338874	1338794

Take the rotor (48) and place the rear bearing plate (46) with grooves to rotor, into position. Press bearing (43) onto the rotor so that there is a 0.038mm (0.0015in) gap between the rotor and the rear bearing plate. Holding the rotor and rear bearing plate assembly with the gear end of the rotor uppermost, slide the cylinder (47) over the rotor.

Locate the rotor blades (49) into their slots in the rotor and lubricate. Place the front bearing plate (46) into position, with grooves to rotor. Press the front bearing (43) onto the rotor until all the free axial movement between the front and rear bearings is removed. Place the front bearing housing (44) over its bearing making sure that the location pin and hole are aligned.

Locate the rear bearing housing (50) with cap (52) and check that the rotor is free to rotate.

Final Assembly

Place control top in vice using flats as in dismantling, then place gasket (54) in position so that the pin location hole is clear. Remove the rear bearing housing (50) from the motor complete (53) and locate in the control top, load the rest of the motor into position then slide the motor case (40) over the motor and screw fully into the control top. Slide the planet cage assemblies into the motor case checking that as each assembly is located the unit is free to rotate, check that push-rods (41 & 55) are fitted and operate without binding.

Now tighten the nose to 40Nm (29.5 lbf.ft.) and replace spacer and circlip.

NOTE:

Now check setting dimension of push rod (41). This is done by measuring the distance from circlip (20) to tip of Push Rod (41) with ball held on its seat. The dimension should be 31.5-32mm. To adjust remove air inlet (73) and adjust position of ball on the rod bearing in mind the pitch is 0.35mm. Then rebuild front end of tool.

The tool should be connected to the air supply and tested for correct operation.

If the tool is to be used on a dry airline installation it should be run for a few minutes to clear any oil, used in assembly, from the motor.

Item No.	Part No.	Description	Qty.
1	74088	Thread Protection Cap	1
2	73798	Bearing Bush	2
3	298913	Clutch Case	1
4	161253	Spring Ring	1
5	301513	Clutch Case Complete	1
6	169053	Spacer 2.0mm	
	169063	Spacer 2.4mm	
	169073	Spacer 2.8mm	A/R
	169083	Spacer 3.2mm	
	169093	Spacer 3.5mm	
7	74970033	Shim 0.08mm	
	74970053	Shim 0.13mm	A/R
	74970103	Shim 0.25mm	
8	86058	Spring Ring	1
9	296643	Bit Holder 5/16" Hex	1
10	72408	Ball	1
11	298043	Bit Holder 5/16" Hex (complete)	1
*12	200083	Circlip	1
13	301013	Spring	1
14	301003	Sleeve	1
15	300983	Bit Holder 1/4" Hex	1
16	3543	Ball	1
17	301043	Roller	1
18	301023	Bit Holder 1/4" Hex (complete)	1
19	297023	Clutch complete	1
*20	42353	Circlip	1
21	268973	Gear and Nose	1
22	237333	Distance Collar	1
*23	178543	Bearing	1
*24	37423	Circlip	1
*25	502093	Needle Bearing	2
26	36703	Planet Wheel	2
27	277503	Planet Cage	1
*28	1453	Planet Pin	2
29	277513	Planet Cage Complete	1
*30	2413	Bearing	2
31	37623	Washer	1
*32	2423	Bearing	1
33	36713	Ring Gear	1
*34	25573	Circlip	1
*35	502093	Needle Bearing	2
36	65383	Planet Wheel	2
37	277483	Planet Cage	1
*38	1453	Planet Pin	2
39	277493	Planet Cage Complete	1
40	252973	Motor Case	1
41	301533	Push Rod	1
42	65373	Pinion	1
*43	33433	Bearing	2
44	254893	Front Bearing Housing	1
45	256123	Spring Pin	1
46	254873	Bearing Plate	2
47	254853	Cylinder	1
48	237373	Rotor	1
*49	300623	Rotor Blades 'Dryline'	5
50	254883	Rear Bearing Housing	1
*51	256123	Spring Pin	1
52	270493	End Cap	1

2D89-AX-600

Item No.	Part No.	Description	Qty.
53	302653	Motor Complete	1
*54	253003	Gasket	1
55	301793	Push Rod	1
*56	221973	'O' Ring	1
57	261483	Control Top	1
58	259953	Spring Pin	1
*59	250913	'O' Ring	1
# 60	252543	Reversing Valve	1
# 61	252563	Spring	2
62	252983	Insert	2
63	252383	Valve Seat	1
*64	500953	'O' Ring	1
65	278833	Push Rod and Ball Assembly	1
66	252493	Spring	1
*67	203423	'O' Ring	1
68	252423	Silencer Housing	1
69	252483	Spacer	1
70	252453	Sintered Silencer	1
*71	202313	'O' Ring	1
*72	268513	'O' Ring	1
73	261503	Inlet Adaptor — ¼in BSP	1
—	261513	Inlet Adaptor — ¼in NPT	1
74	261433	Control Top Complete ¼" BSP	1
	261443	Control Top Complete ¼"NPT	1
		Optional Accessory	
76	296973	Bit Holder ¼" Hex (complete)	1
77	296633	Bit Holder ¼" Hex	1
78	256763	Spring Pin	1
79	86058	Spring Ring	1
80	66868	Ball 5/32" dia.	1
		Supplied Accessories	
—	29932	Clutch Key	1
—	39433	Suspension Bail	1
—	222453	Exhaust Hose	1
—	—	Clutch Spring — next in series to extend torque range of tool	1

* Indicates normal replacement items. It is recommended that adequate stocks are held for servicing requirements.

# Indicates updated parts.

Always quote tool model number, serial number and spare part number when ordering spares.

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Fax: 081-205 5167

Printed in England *4.90*

REQUIREMENTS

Air Supply

A water free and filtered air supply is required at a pressure of 6 bar (87 lbf/in^2), with a flow of 8.4 l/s (18 scfm); controlled by a pressure regulator selected from the Desoutter Air Line Service Equipment Catalogue.

Lubrication

This is a DRYLINE tool designed to operate on a totally dry airline i.e., one without any oil or water moisture. The speed of the tool when operated dry will be found to be 10% lower than that stated on the tool nameplate; this will not alter the overall performance.

DRYLINE tools can also operate on a lubricated or partly lubricated airline thus allowing easy tool interchangeability with existing installations. If lubrication is required an airline lubricator should be fitted down stream of the filter.

Desoutter recommend the use of an ISO Viscosity Classified Oil, grade number ISO VG 15, in the lubricator.

Accessories

A wide range of screwdriving bits and nutrunning sockets are available and a suitable item should be selected from the Desoutter Accessories Catalogue.

The retention of these items is by spring loaded ball, which requires a sharp pull to release for the 5/16 in bit holder, or by pulling the sleeve forward to release for the 1/4 in bit holder.

OPERATING

With the correct accessory fitted connect the tool to the air supply. Grip the tool around the motor case and press the tool onto the fixing that is to be tightened; the motor will start and tighten the fixing to the required torque, set by adjusting the tension on the clutch spring, at this point the internal drive is disengaged and the air to the motor cut off.

To engage reverse rotation press the reverse button and rotate it to lock in position.

NOTE: With the same clutch setting a higher torque is always transmitted in reverse, ensuring a speedy fastener removal.

WARNING

1) Always disconnect tool from the power supply before attempting any replacement, adjustment, servicing or dismantling.

2) Ensure that no loose articles of clothing or cleaning material can be caught by the rotating parts of the tool.

3) Always allow the tool to stop before removing work or resting tool.

4) Ensure that work piece is securely clamped before commencement of operation — clear all loose items from vicinity.

INITIAL SETTING

When received the torque output of the tool will require setting to match the job requirement.

It is recommended that a trial tightening operation is carried out to determine the amount of adjustment required. The ideal instrument for checking the torque is an electronic torque meter, request information from Desoutter; failing this a dial indicating torque wrench is adequate.

Clutch Adjustment

Rotate the spring ring (4) to uncover access hole in clutch case (3); insert clutch key, supplied with tool, and rotate to obtain the required torque.

SERVICING REQUIREMENTS

General Notes

Replace as necessary all 'O' rings, gaskets, bearings and rotor blades.

Use the foillowing lubricants:

Oil — ISO Viscosity Classified — ISO VG 15, for motor.
Grease — BP FG00-EP, for motor bearings.
Grease — Duckhams Type Q5618, for gears and other bearings.
Silicone Grease — Molykote 33, for 'O' rings.

ATTENTION:

The rotor blades in this tool have a PTFE content. The norma Health and Safety recommendations concerning PTFE must be observed when handling these rotor blades.

1. Do not smoke.
2. Motor components must be washed with cleaning fluid and not blown clear with an air line.
3. Sintered silencers must be replaced when dirty, do not clean and re-use.
4. Wash hands before commencing any other activity.

Bearings that have a retainer holding the balls in place must be assembled into the tool with the blank face of the retainer to the air flow; in the case of the motor the blank faces must face each other across the rotor.

The threads in this tool are left hand with the exception of the air inlet adaptor.

Customers wishing to service the clutch (19) should request a separate service sheet from Desoutters.

TO DISMANTLE

Clamp tool in Vice using Flats on Control top. Unscrew Clutch Housing (5) and remove clutch (19) and output Drive (11).

Remove Circlip (20) and spacer (22) from final Planet Cage (29) and insert tool into Gear and Nose (21). Then loosen.

Remove tool from Vice then holding the tool unscrew the Control Top (74) and remove Motor (53) and planet cage complete (39).

Passing through the motor and gearbox are push-rods, these should now be inspected for straightness and stored for future assembly.

The remainder of the dismantling follows normal engineering practice with reference to the illustration.

TO ASSEMBLE

Assembly Notes:

1) When locating the motor complete (53) in the control top complete (74), the pin projecting out of rear bearing housing complete (50) must enter the location hole in the control top.

2) It is important that spacer (69) is located the correct way round: concave side to the rear of the tool.

3) The push-rod and ball assembly (65) is the point of adjustment for the push-rods (41 & 55). To check for correct assembly of the push-rods, see final Assembly Notes.

Sub Assemblies

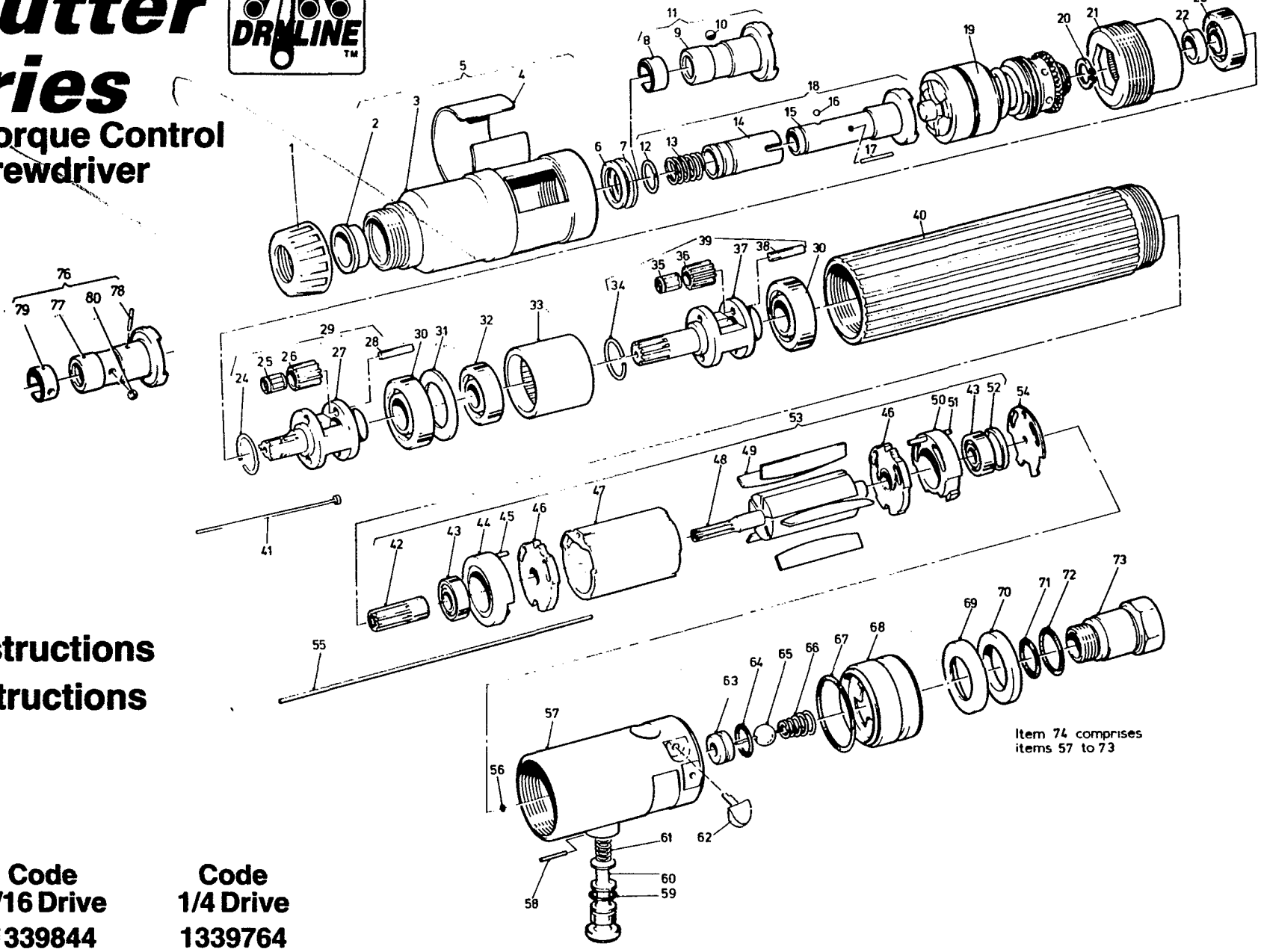
Using the illustration as a guide, assemble control and planet cages. The push-rods (41 & 55) must be positioned while there is free access for them.

The following instructions for the motor complete (53) must be followed.

Desoutter D Series

DRILINE™

Reversible Torque Control One Shot Screwdriver



Operating Instructions
Servicing Instructions
Parts List

Type	Code 5/16 Drive	Code 1/4 Drive
2D89-AX-450	1339844	1339764

Take the rotor (48) and place the rear bearing plate (46) with grooves to rotor, into position. Press bearing (43) onto the rotor so that there is a 0.038mm (0.0015in) gap between the rotor and the rear bearing plate. Holding the rotor and rear bearing plate assembly with the gear end of the rotor uppermost, slide the cylinder (47) over the rotor.

Locate the rotor blades (49) into their slots in the rotor and lubricate. Place the front bearing plate (46) into position, with grooves to rotor. Press the front bearing (43) onto the rotor until all the free axial movement between the front and rear bearings is removed. Place the front bearing housing (44) over its bearing making sure that the location pin and hole are aligned.

Locate the rear bearing housing (50) with cap (52) and check that the rotor is free to rotate.

Final Assembly

Place control top in vice using flats as in dismantling, then place gasket (54) in position so that the pin location hole is clear. Remove the rear bearing housing (50) from the motor complete (53) and locate in the control top, load the rest of the motor into position then slide the motor case (40) over the motor and screw fully into the control top. Slide the planet cage assemblies into the motor case checking that as each assembly is located the unit is free to rotate, check that push-rods (41 & 55) are fitted and operate without binding.

Now tighten the nose to 40Nm (29.5 lbs.ft) and replace spacer and circlip.

NOTE:

Now check setting dimension of push rod (41). This is done by measuring the distance from circlip (20) to tip of Push Rod (41) with ball held on its seat. The dimension should be 31.5-32mm — (600, 1,000, 1,500, 22,200, rpm) 43.5-44mm — (450 rpm). To adjust remove air inlet (73) and adjust position of ball on the rod bearing in mind the pitch is 0.35mm. Then rebuild front end of tool.

The tool should be connected to the air supply and tested for correct operation.

If the tool is to be used on a dry airline installation it should be run for a few minutes to clear any oil, used in assembly, from the motor.

Item No.	Part No.	Description	Qty.
1	74088	Thread Protection Cap	1
2	73798	Bearing Bush	2
3	298913	Clutch Case	1
4	161253	Spring Ring	1
5	301523	Clutch Case Complete	1
6	169053	Spacer 2.0mm	
	169063	Spacer 2.4mm	
	169073	Spacer 2.8mm	A/R
	169083	Spacer 3.2mm	
	169093	Spacer 3.5mm	
7	74970033	Shim 0.08mm	
	74970053	Shim 0.13mm	A/R
	74970103	Shim 0.25mm	
8	86058	Spring Ring	1
9	296643	Bit Holder 5/16" Hex	1
10	72408	Ball	1
11	298043	Bit Holder 5/16" Hex (complete)	1
*12	200083	Circlip	1
13	301013	Spring	1
14	301003	Sleeve	1
15	300983	Bit Holder 1/4" Hex	1
16	3543	Ball	1
17	301043	Roller	1
18	301023	Bit Holder 1/4" Hex (complete)	1
19	297003	Clutch complete	1
*20	42353	Circlip	1
21	268973	Gear and Nose	1
22	237333	Distance Collar	1
*23	178543	Bearing	1
*24	37423	Circlip	1
*25	502093	Needle Bearing	2
26	36703	Planet Wheel	2
27	277503	Planet Cage	1
*28	1453	Planet Pin	2
29	277513	Planet Cage Complete	1
*30	2413	Bearing	2
31	37623	Washer	1
*32	2423	Bearing	1
33	36713	Ring Gear	1
*34	37423	Circlip	1
*35	502093	Needle Bearing	2
36	36703	Planet Wheel	2
37	161413	Planet Cage	1
*38	1453	Planet Pin	2
39	161403	Planet Cage Complete	1
40	252973	Motor Case	1
41	301543	Push Rod	1
42	Number not used		
*43	33433	Bearing	2
44	254893	Front Bearing Housing	1
45	256123	Spring Pin	1
46	254873	Bearing Plate	2
47	254853	Cylinder	1
48	84423	Rotor	1
*49	300623	Rotor Blades 'Dryline'	5
50	254883	Rear Bearing Housing	1
*51	256123	Spring Pin	1
52	270493	End Cap	1

2D89-AX-450

Item No.	Part No.	Description	Qty.
53	302643	Motor Complete	1
*54	253003	Gasket	1
55	301793	Push Rod	1
*56	221973	'O' Ring	1
57	261483	Control Top	1
58	259953	Spring Pin	1
*59	250913	'O' Ring	1
60	262543	Reversing Valve	1
61	252563	Spring	1
62	252983	Insert	2
63	252383	Valve Seat	1
*64	500953	'O' Ring	1
65	278833	Push Rod and Ball Assembly	1
66	252493	Spring	1
*67	203423	'O' Ring	1
68	252423	Silencer Housing	1
69	252483	Spacer	1
70	252453	Sintered Silencer	1
*71	202313	'O' Ring	1
*72	268513	'O' Ring	1
73	261503	Inlet Adaptor — ¼in BSP	1
—	261513	Inlet Adaptor — ¼in NPT	1
74	261433	Control Top Complete ¼" BSP	1
	261443	Control Top Complete ¼"NPT	1
75	302563	Nameplate	1
		Optional Accessory	
76	296973	Bit Holder ¼" Hex (complete)	1
77	296633	Bit Holder ¼" Hex	1
78	256763	Spring Pin	1
79	86058	Spring Ring	1
80	66868	Ball 5/32" dia.	1
		Supplied Accessories	
—	29932	Clutch Key	1
—	39433	Suspension Bail	1
—	222453	Exhaust Hose	1
—	—	Clutch Spring — next in series to extend torque range of tool	1

* Indicates normal replacement items. It is recommended that adequate stocks are held for servicing requirements.

Always quote tool model number, serial number and spare part number when ordering spares.

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319 Edgware Road, Colindale, London NW9 6ND.
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Fax: 01-205 5167

Printed in England 4.89

REQUIREMENTS

Air Supply

A water free and filtered air supply is required at a pressure of 6 bar (87 lbf.in^2), with a flow of 8.4 l/s (18 scfm); controlled by a pressure regulator selected from the Desoutter Air Line Service Equipment Catalogue.

Lubrication

This is a DRYLINE tool designed to operate on a totally dry airline i.e., one without any oil or water moisture. The speed of the tool when operated dry will be found to be 10% lower than that stated on the tool nameplate; this will not alter the overall performance.

DRYLINE tools can also operate on a lubricated or partly lubricated airline thus allowing easy tool interchangeability with existing installations. If lubrication is required an airline lubricator should be fitted down stream of the filter.

Desoutter recommend the use of an ISO Viscosity Classified Oil, grade number ISO VG 15, in the lubricator.

Accessories

A wide range of screwdriving bits and nutrunning sockets are available and a suitable item should be selected from the Desoutter Accessories Catalogue.

The retention of these items is by spring loaded ball, which requires a sharp pull to release for the 5/16 in bit holder, or by pulling the sleeve forward to release for the 1/4 in bit holder.

OPERATING

With the correct accessory fitted connect the tool to the air supply. Grip the tool around the motor case and press the tool onto the fixing that is to be tightened; the motor will start and tighten the fixing to the required torque, set by adjusting the tension on the clutch spring, at this point the internal drive is disengaged and the air to the motor cut off.

To engage reverse rotation press the reverse button and rotate it to lock in position.

NOTE: With the same clutch setting a higher torque is always transmitted in reverse, ensuring a speedy fastener removal.

WARNING

1) Always disconnect tool from the power supply before attempting any replacement, adjustment, servicing or dismantling.

2) Ensure that no loose articles of clothing or cleaning material can be caught by the rotating parts of the tool.

3) Always allow the tool to stop before removing work or resting tool.

4) Ensure that work piece is securely clamped before commencement of operation — clear all loose items from vicinity.

INITIAL SETTING

When received the torque output of the tool will require setting to match the job requirement.

It is recommended that a trial tightening operation is carried out to determine the amount of adjustment required. The ideal instrument for checking the torque is an electronic torque meter, request information from Desoutter; failing this a dial indicating torque wrench is adequate.

Clutch Adjustment

Rotate the spring ring (4) to uncover access hole in clutch case (3); insert clutch key, supplied with tool, and rotate to obtain the required torque.

SERVICING REQUIREMENTS

General Notes

Replace as necessary all 'O' rings, gaskets, bearings and rotor blades.

Use the foillowing lubricants:

Oil — ISO Viscosity Classified — ISO VG 15, for motor.
Grease — BP FG00-EP, for motor bearings.
Grease — Duckhams Type Q5618, for gears and other bearings.
Silicone Grease — Molykote 33, for 'O' rings.

ATTENTION:

The rotor blades in this tool have a PTFE content. The normal Health and Safety recommendations concerning PTFE must be observed when handling these rotor blades.

1. Do not smoke.
2. Motor components must be washed with cleaning fluid and not blown clear with an air line.
3. Sintered silencers must be replaced when dirty, do not clean and re-use.
4. Wash hands before commencing any other activity.

Bearings that have a retainer holding the balls in place must be assembled into the tool with the blank face of the retainer to the air flow; in the case of the motor the blank faces must face each other across the rotor.

The threads in this tool are left hand with the exception of the air inlet adaptor.

Customers wishing to service the clutch (19) should request a separate service sheet from Desoutters.

TO DISMANTLE

Clamp tool in Vice using Flats on Control top. Unscrew Clutch Housing (5) and remove clutch (19) and output Drive (11).

Remove Circlip (20) and spacer (22) from final Planet Cage (29) and insert tool into Gear and Nose (21). Then loosen.

Remove tool from Vice then holding the tool unscrew the Control Top (74) and remove Motor (53) and planet cage complete (39).

Passing through the motor and gearbox are push-rods, these should now be inspected for straightness and stored for future assembly.

The remainder of the dismantling follows normal engineering practice with reference to the illustration.

TO ASSEMBLE

Assembly Notes:

1) When locating the motor complete (53) in the control top complete (74), the pin projecting out of rear bearing housing complete (50) must enter the location hole in the control top.

2) It is important that spacer (69) is located the correct way round: concave side to the rear of the tool.

3) The push-rod and ball assembly (65) is the point of adjustment for the push-rods (41 & 55). To check for correct assembly of the push-rods, see final Assembly Notes.

Sub Assemblies

Using the illustration as a guide, assemble control and planet cages. The push-rods (41 & 55) must be positioned while there is free access for them.

The following instructions for the motor complete (53) must be followed.