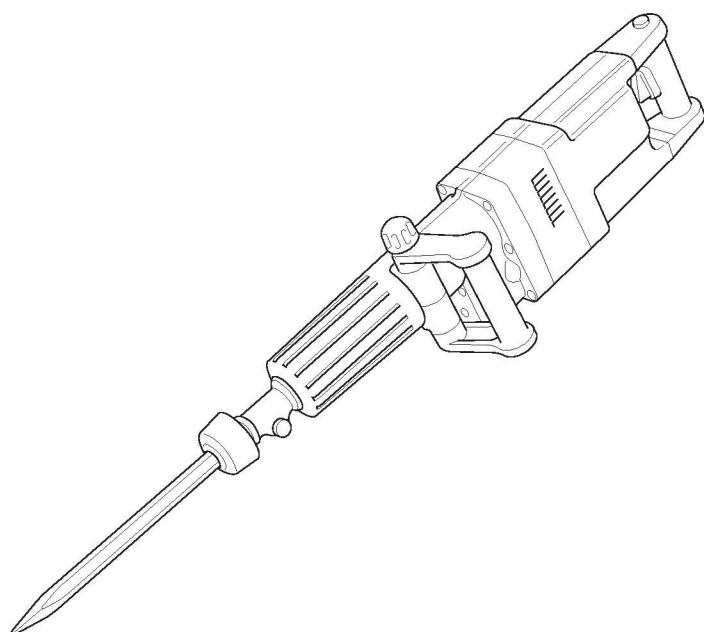
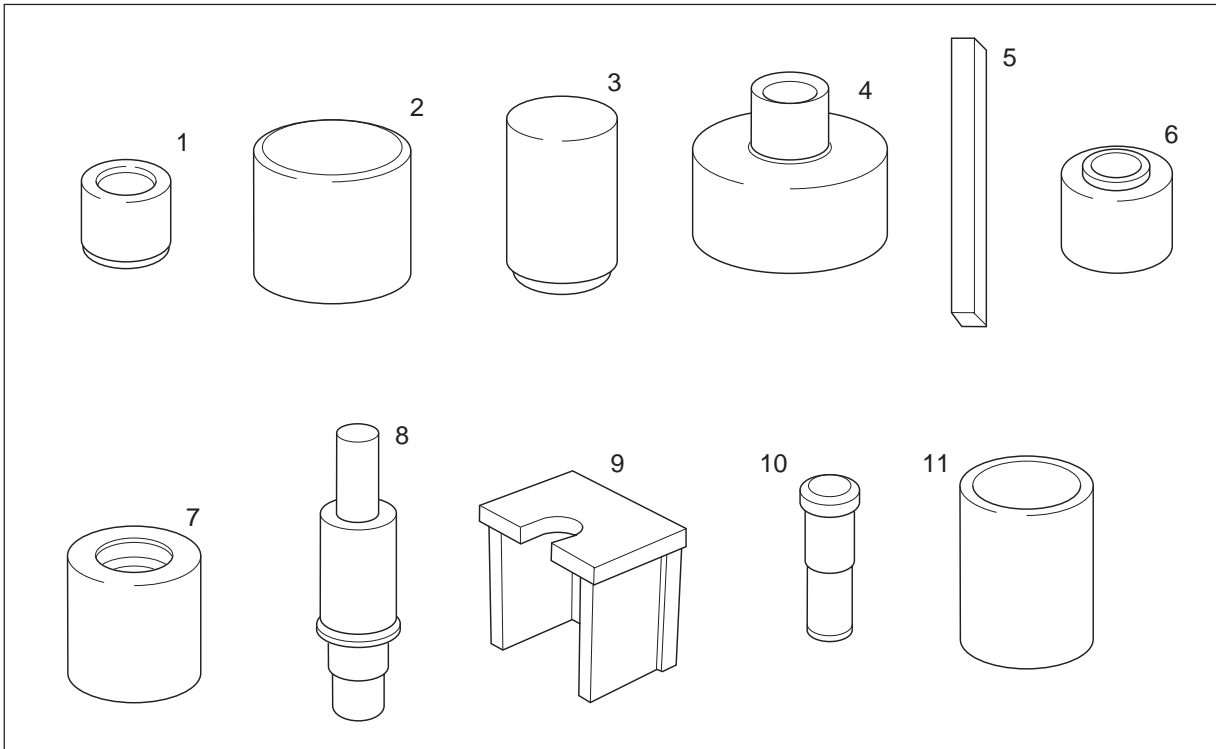


**Service and  
Repair Manual**



# 1400

Опубликовано на сайте [www.rem-5.ru](http://www.rem-5.ru)



ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1	9170 0234 20	MANDREL BASE	7	9170 3023 10	PRESS TOOL (ARMATURE)
2	9170 3023 00	STRIKER GUIDE TOOL	8	9170 2383 02	MANDREL
3	9170 3022 90	PRESS TOOL (ANVIL)	9	9170 3023 20	PRESS TOOL (LAYSHAFT)
4	9170 3023 30	PRESS TOOL (ISB)	10	9170 7327 03	MANDREL
5	9170 0237 50	HOLDING SPANNER	11	9170 3038 60	ANVIL GUIDE
6	9170 0233 20	MANDREL			

## TORQUE SETTINGS

### MODEL 1400MV

ITEM NO.	PART NO.	Nm	In/lbs
31	9170 0197 40	4.5	40
35	9170 0510 60	30	266
52	9170 6304 30	2.0	18
56	9170 2937 10	4.5	40
65	9170 2937 00	4.5	40
69	9170 2300 70	2.0	18
82	9170 2604 00	2.0	18
91	9170 1756 10	2.0	18
113	9170 7070 14	30	266

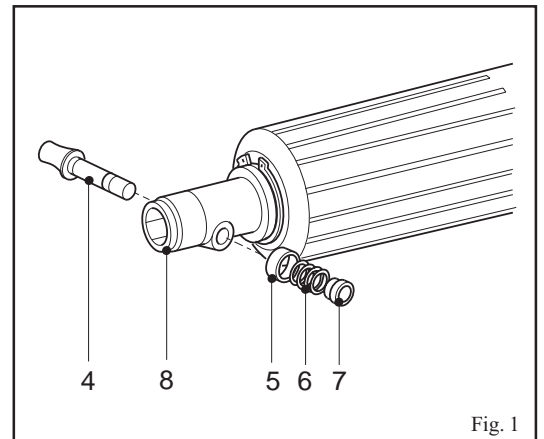
### MODEL 1400KV/1400BV

ITEM NO.	PART NO.	Nm	In/lbs
31	9170 0197 40	4.5	40
35	9170 0510 60	30	266
52	9170 6304 30	2.0	18
56	9170 2937 10	4.5	40
65	9170 2937 00	4.5	40
69	9170 2300 70	2.0	18
82	9170 2604 00	2.0	18
91	9170 1756 10	2.0	18
99	9170 0510 50	30	266

**Important!** Before carrying out any repairs, the hammer should be checked for electrical safety and for mechanical performance. For electrical safety the hammer should be placed on a non-conductive surface which is either of a wooden construction (with the mains supply disconnected) which contains no metal parts or a bench which is insulated by a rubber mat. The hammer should then be checked by high voltage flash testing. On completion of dismantling procedure all electrical components should then be checked for electrical safety. The hammer should **ONLY** be checked for hammer performance if the unit passes the electrical safety test.

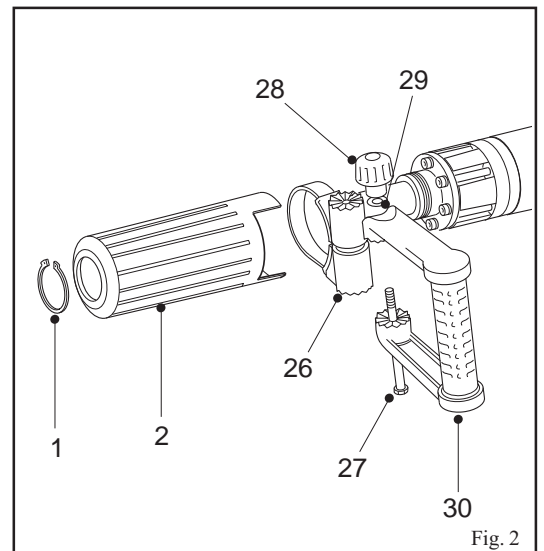
## DISMANTLING

- Removing the tool locking mechanism (1400, 1400B)**
1. Using a hammer and suitable drift, remove the latch bar (4).
  2. Remove and retain the latch end retainer (7), spring (6) and cover (5).

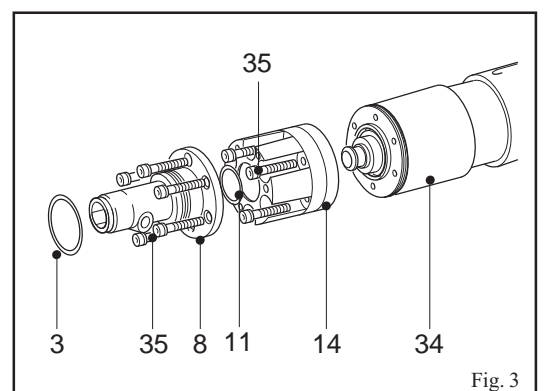


- Removing the front handle mechanism (1400, 1400B)**
1. Remove the circlip (1), knob (28), and retaining screw (27) together with the associated washer (29).
  2. Remove the front handle (30), nose cap (2) and strap casting (26).

**Warning:** Hold strap casting (26) whilst removing nose cap (2).



- Removing the nosepiece (1400, 1400B)**
1. Remove the six Allen retaining screws (35) from the nose piece (8).
  2. Remove the nosepiece assembly (8).
  3. Remove the six allen screws (35) from the anvil housing (14) and remove anvil housing (14).
  4. Remove and discard O-rings (3) & (11).



### Dismantling the anvil assembly (1400, 1400B)

1. Remove the catcher housing (19) rubber ring (18) and recoil absorber (17) from the anvil housing (14).
2. Remove the anvil (13) and seal (12), recoil ring (16) from the anvil housing (14).
3. Remove the locating ring (21), 'O' rings (22) & (20) from the hammer casing (34).
4. Remove 'O' ring (20), from the anvil housing.
5. Place unit on a suitable protected surface and remove liner (15) using Service Tool 9170 3022 90.

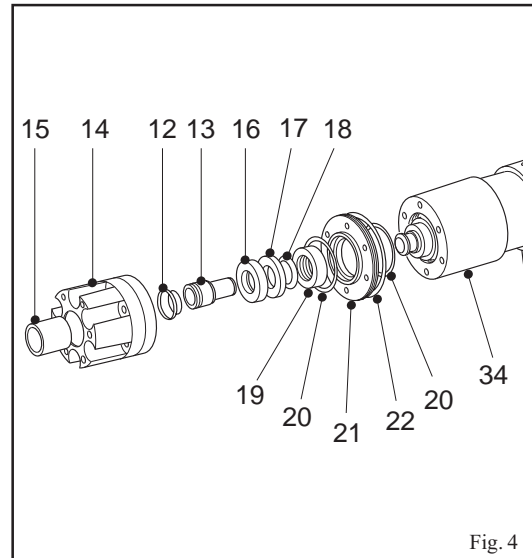


Fig. 4

### Dismantling the SDS assembly (1400M)

1. Remove end cap (102) and chuck cover (103).
2. Remove the following items:
  - wire clip (104)
  - buffer stop (105)
  - buffer (106)
  - SDS chuck (107)
3. Remove two latches (108) and remove the following items:
  - latch plate (109)
  - spring (110)
  - lock plate (111)
  - lock chuck (112)

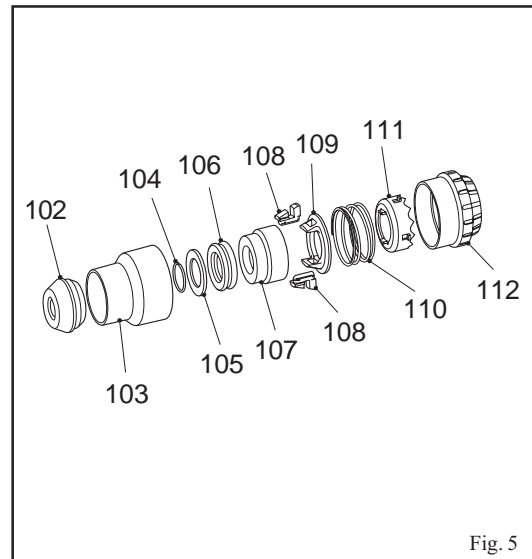


Fig. 5

### Removing the driver (1400M)

1. Remove six screws (113), nose piece (115) four balls (114) and trans housing (124).
2. Remove nose cover (120) and 'O' ring (121).
3. Remove the following items:
  - driver (117)
  - 'O' ring (126)
  - junk ring (118)
  - anvil (119)
  - seal (12)
  - 'O' ring (122)
  - junk ring (123)
  - recoil transfer ring (125)

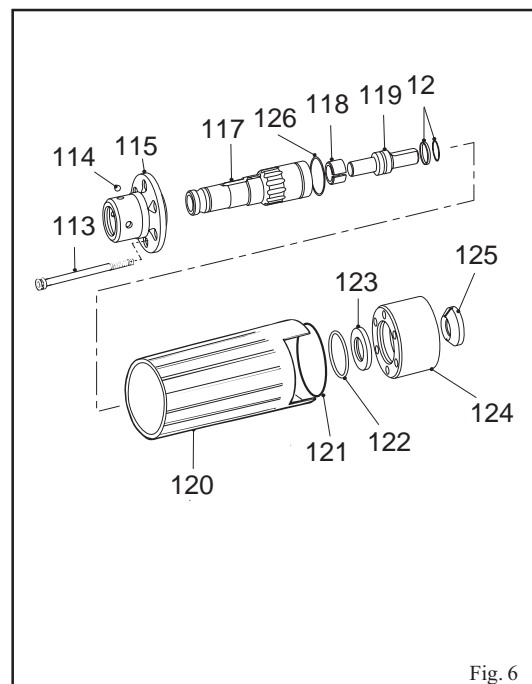
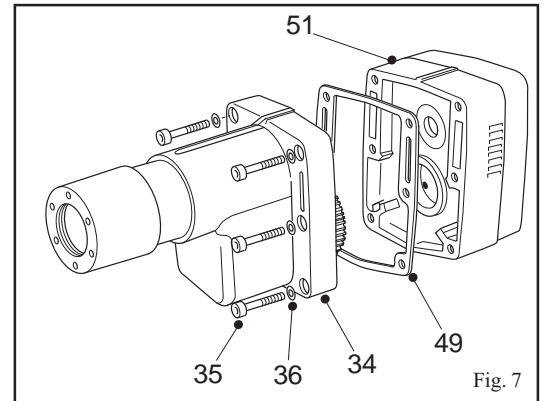


Fig. 6

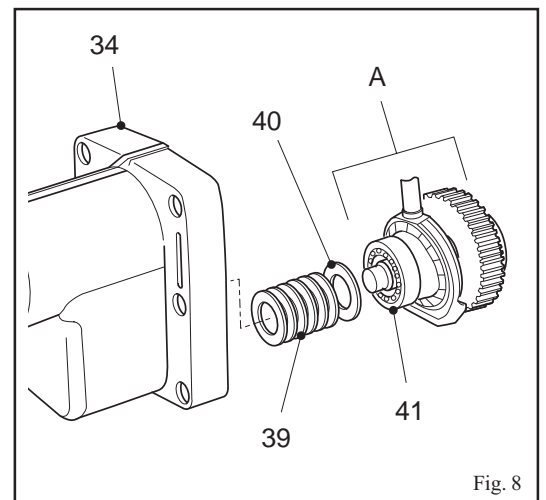
### Removing the hammer casing

1. Remove the six Allen bolts (35) and their associated washers (36).
2. Remove the hammer casing (34) from the bearing housing (51). Remove and discard the gasket (49).



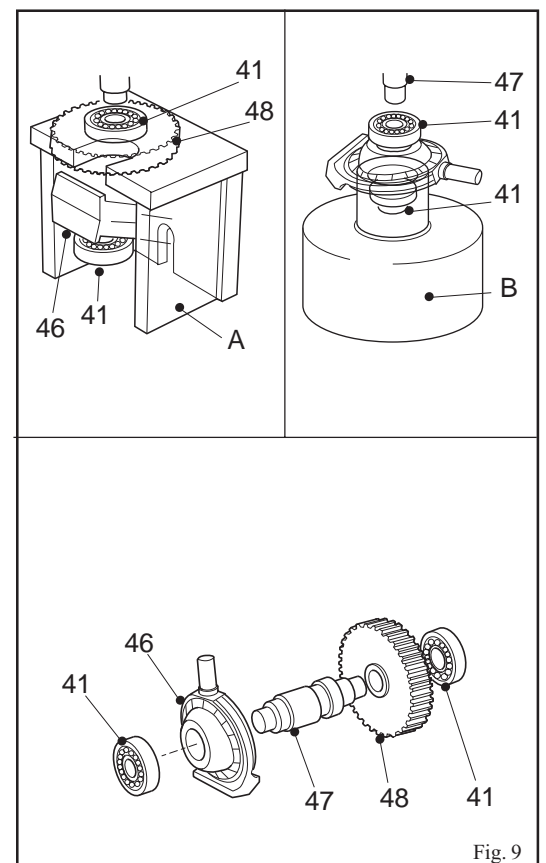
### Removing the Inclined Shaft Bearing Assembly (ISB)

1. Withdraw the complete inclined shaft (47) bearing assembly (A) from the hammer casing (34).
2. Remove the taper roller bearing outer (41), packing washer (40) and spring disk assembly (39).



### Dismantling the Inclined Shaft Bearing Assembly (ISB)

1. Using Service Tool 9170 3023 20 (A) press the complete assembly (46) from the tapered roller bearing (41) and gear (48).
2. Invert the assembly and using Service Tool 9170 3023 30 (B) press on the layshaft to remove the tapered roller bearing (41) from the layshaft (47), and the layshaft (49) from the inclined shaft bearing.



### Removal and Dismantling of the Piston Assembly

1. Pull the piston assembly (45) from the hammer casing (34).
2. Remove and discard the bearing clip (44) and withdraw the gudgeon pin (43).
3. Remove and discard the nu-lip seal (42) from the piston (45).

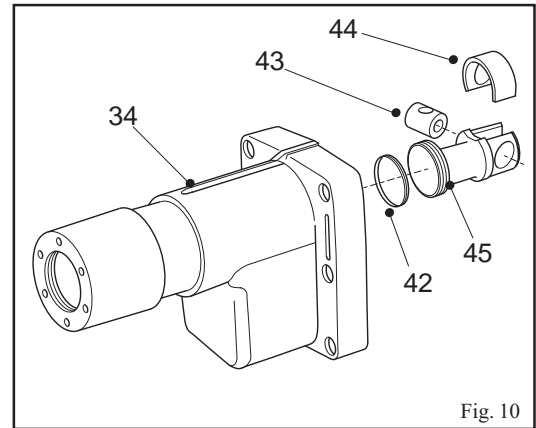


Fig. 10

### Removal and Dismantling of the Striker Assembly

1. Using a wooden hammer shaft, gently push the striker assembly (23), from the hammer case (34).
2. Remove and discard the striker bearing clips (24) and the seal (25).

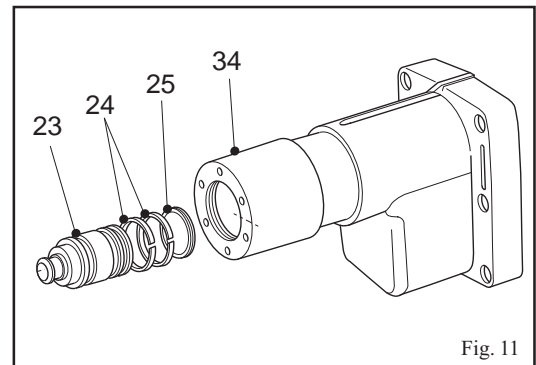


Fig. 11

**Note:** The following procedure is carried out only if the barrel is damaged or worn, and is to be replaced.

### Removal of the Barrel Assembly

1. Remove the three retaining screws (31) and the barrel retainer (38).
2. Press the barrel assembly (37), from the hammer case (34).

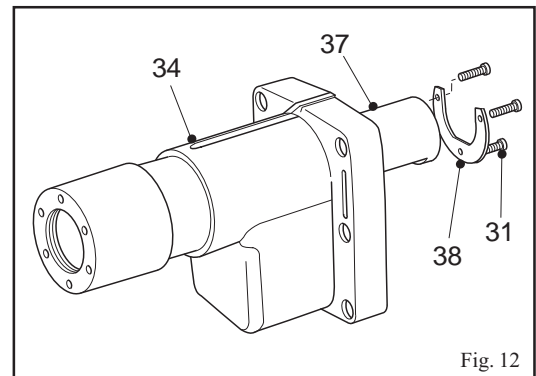


Fig. 12

### Removal of the Carbon Brushes

1. Remove two screws (76) and mounting plate (86).
2. Disconnect condenser unit (89).
3. Identify and disconnect cables from terminal block (87).

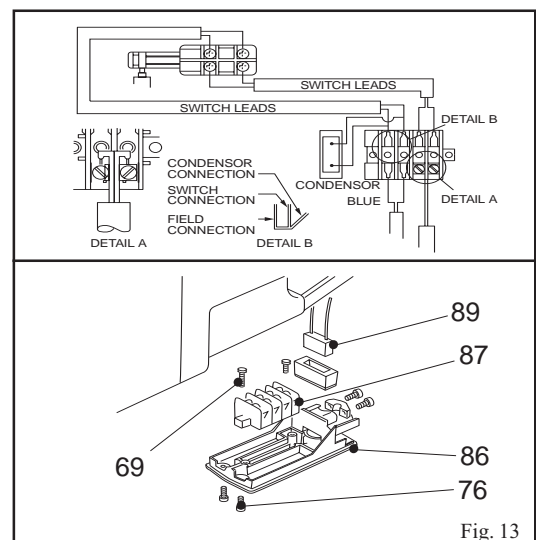


Fig. 13

### Removal of the Motor Assembly from the Bearing Housing

1. Remove the six Allen bolts (35) from the motor housing (73) and lift off the motor assembly (A).

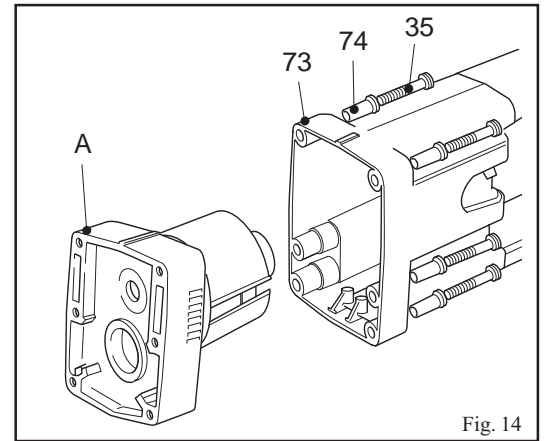


Fig. 14

### Dismantling the Rear Handle Assembly

1. Remove the upper handle locking plate screws (69) and, using a screwdriver, withdraw the upper plate (80).
2. Using a screwdriver, lever off the upper handle support (79) together with its associated rubber handle support (78), releasing both sides at the same time.

**Note:** It will be necessary to spread the two locating clips inside the housing (73).

3. Remove the handle cover retaining screw (82) and withdraw the rear grip (81).
4. Disconnect the wires from the switch (83).
5. Remove the switch assembly from the handle (77).

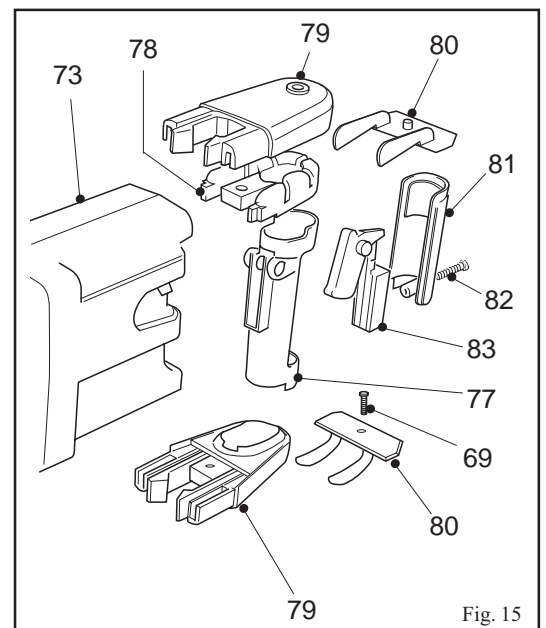


Fig. 15

### Dismantling the field case

1. Remove two brush cover retaining screws (76) and remove the covers (75).
2. Release the brush spring (68).
3. Release the locating screws (94) and remove the brush assemblies (71).
4. Remove the brush (61) and switch lead (64) assemblies.
5. Remove the four Allen bolts (65) and withdraw the field casing assembly (66).
6. Remove the baffle (59) from the field case and withdraw the field coil assembly (60).
7. Remove the baffle gasket (51).
8. Remove rubber supports (62) and (63), and (72).

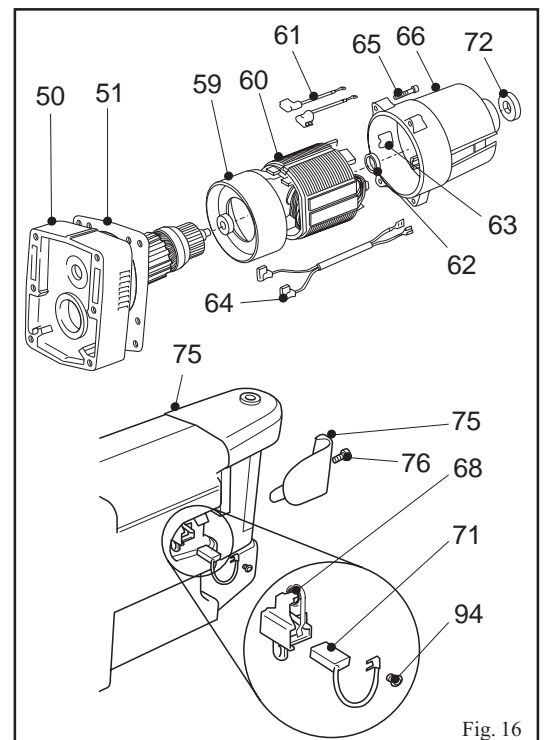


Fig. 16

### Dismantling the Armature Assembly

1. Remove the four retaining Allen bolts (56) and withdraw the armature assembly (B).
2. Place the assembly into a suitable vice and remove the bearing (54) and bearing clamp plate (55).
3. Remove 'O' ring (53).

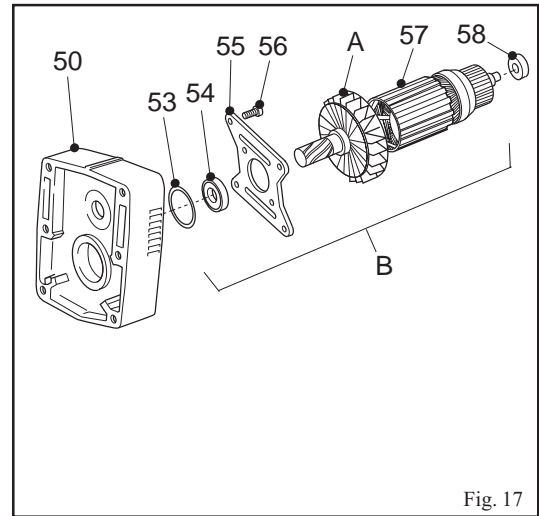


Fig. 17

### Removal of the Taper Roller Bearing Outer Ring

1. Remove the two screws (A) from the inner face of the bearing housing.
2. Refit longer screws (A) and turn alternatively to withdraw bearing outer ring.

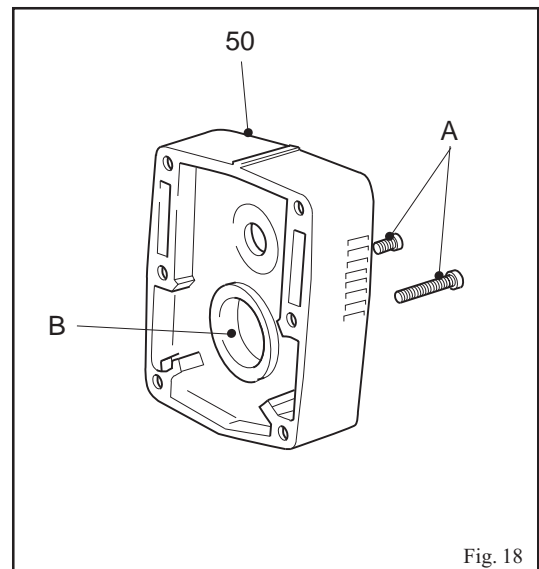


Fig. 18



### General

For best performance hammers should be serviced at regular intervals, any indication that the hammer is not performing as specified should be investigated to prevent any adverse damage occurring.

**ALL SEALS, GASKETS, GREASE OR OTHER PARTS DEEMED NECESSARY FOR SERVICING ARE IN THE SERVICE KIT.**

**ALL NEEDLE ROLLER BEARINGS SHOULD BE PRESSED WITH THE ROUNDED EDGE ENTERING THE BORE FIRST, AND THE PRESS TOOL PRESSING AGAINST THE FLAT SURFACE OF THE BEARING.**

### Cleaning

All mechanical parts with the exception of any sealed bearings should be cleaned in a suitable cleaning fluid. Electrical parts should be cleaned by the use of compressed air.

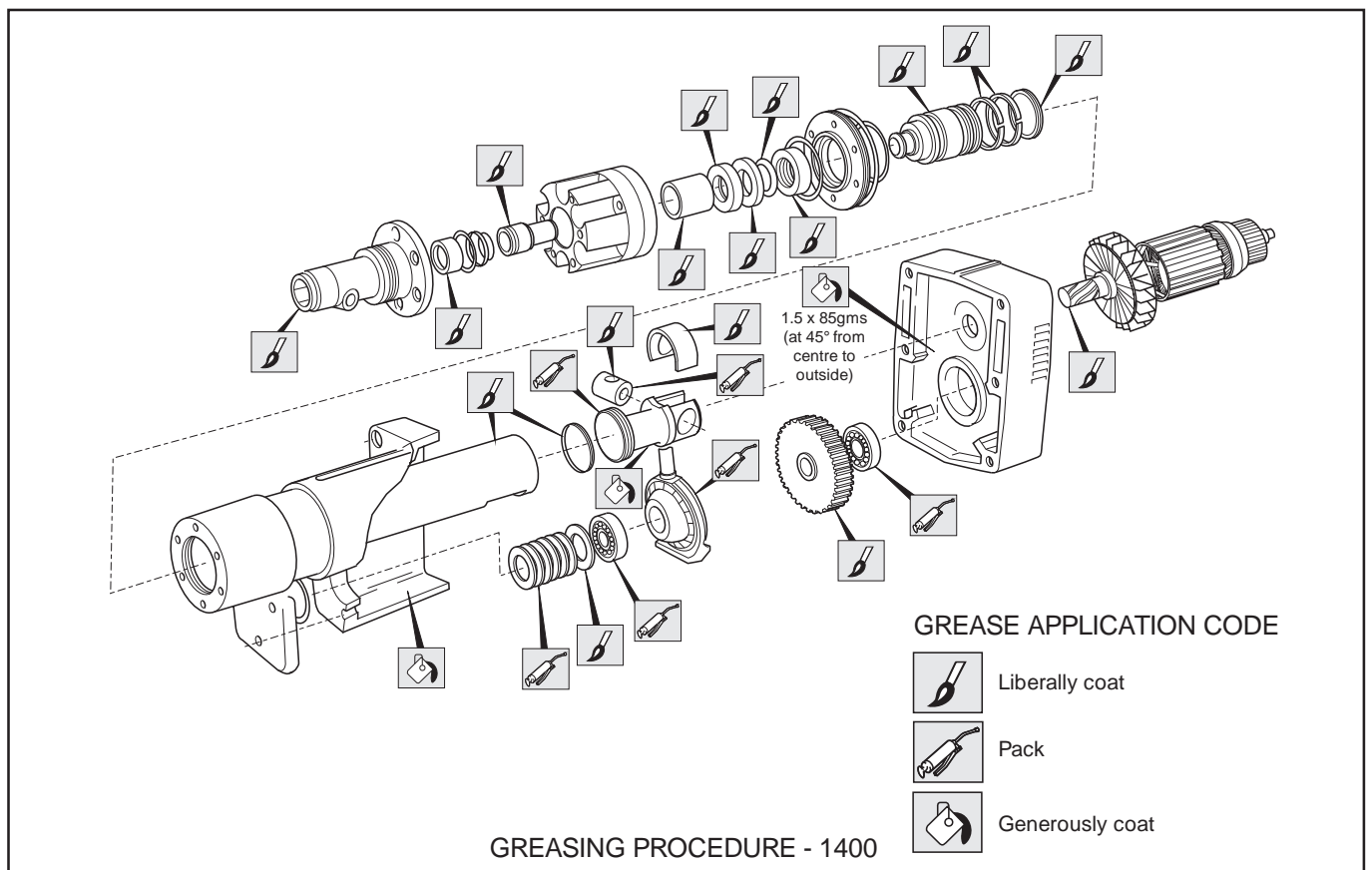
**PRECAUTIONS MUST BE TAKEN FOR PERSONAL SAFETY THE USE OF EYE PROTECTION AND GLOVES IS RECOMMENDED.**

### Inspection

All mechanical and electrical parts should be inspected for wear and replaced as required.

### Lubrication

At service and repair intervals the lubrication should be carried out as shown in the diagram below. All parts in the service kit should be fitted. The total amount of grease for the 1400 is 390 grms (9170304323, blue). Lubrication of the hammer is as shown on the grease chart.

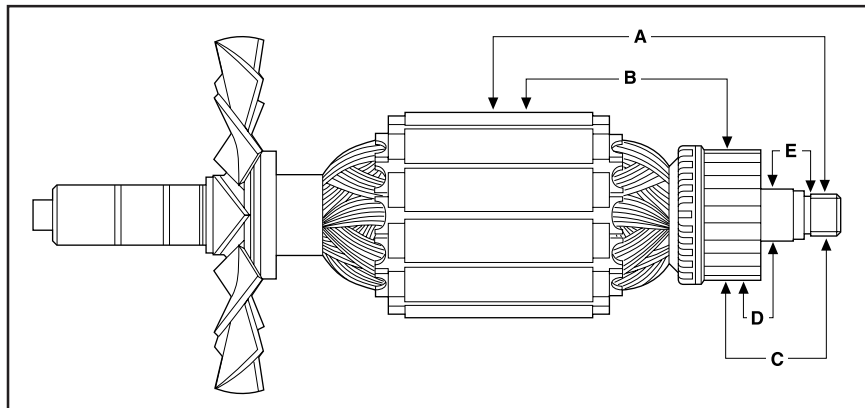


**ALL SCREWS SHOULD BE REFITTED WITH LOCKTITE® 271 OR SIMILAR**

### ELECTRICAL TESTING

**Electrical test** Before assembly all electrical parts **MUST** be checked for safety, and that they conform to specification.

<b>Testing the Armature (Flash Testing)</b>	<b>A</b>	Armature shaft to lamination pack	2500 volts
	<b>B</b>	Lamination pack to commutator	1500 volts
	<b>C</b>	Armature shaft to commutator	4000 volts
	<b>D</b>	Commutator to commutator bush	1500 volts
	<b>E</b>	Commutator bush to shaft	2500 volts



### ELECTRICAL PERFORMANCE TEST READINGS

ARMATURES					
MODEL	100V	110V	120V	230V	240V
1400	0.21Ω	0.21Ω	0.32Ω	1.06Ω	1.2Ω
FIELD COILS					
	100V	110V	120V	230V	240V
1400	0.37Ω	0.49Ω	0.49Ω	1.77Ω	1.77Ω
PERFORMANCE					
Full Load Hammer Test					
	100V	110V	120V	230V	240V
1400	1400W				

**Note:-** On all test readings + or - 5% of figures shown is acceptable.

### ASSEMBLY

#### Refitting the Taper Roller Bearing Housing

1. Refit the small screws (A) to the inner side of the casing (50).
2. Press bearing outer (41) into housing (50).

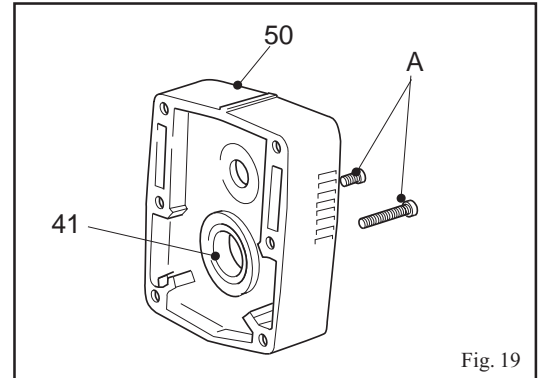


Fig. 19

#### Assembling the Armature

1. Position bearing clamp plate (55) over the armature.
2. With service tool press the bearings (54) and (58) onto armature shaft (57).
3. Fit 'O' ring (53) into bearing housing (50).
4. Fit the assembly into the bearing housing (50) and secure with the four Allen bolts (56). **(Torque load to 4.5 Nm).**

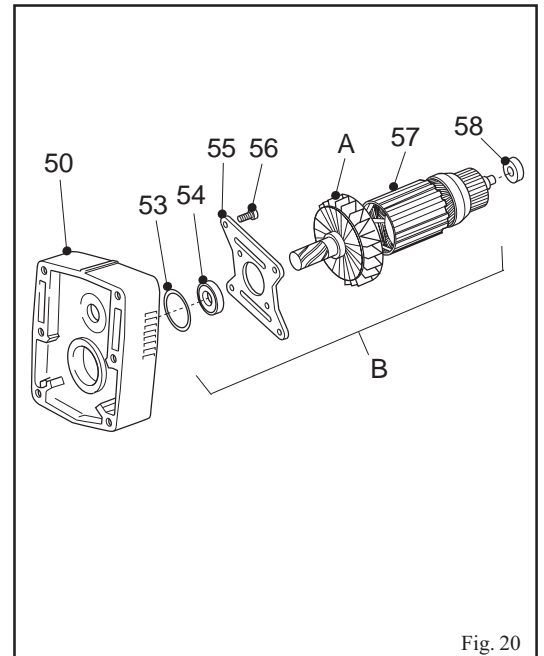


Fig. 20

#### Assembling the Field Case

1. Ensure correct location of field location rubbers (63) and mount (62) prior to assembly.
2. Position the field coil assembly (60) into the field case (66).
3. Fit the baffle gasket (51) and baffle (59) to the field case. Ensure correct orientation.
4. Locate the field case (66) over the armature assembly (57) and fit. Secure with the four retaining Allen bolts (65). **(Torque load to 4.5 Nm).**
5. Refit the brush and switch lead assemblies (61) and (84).

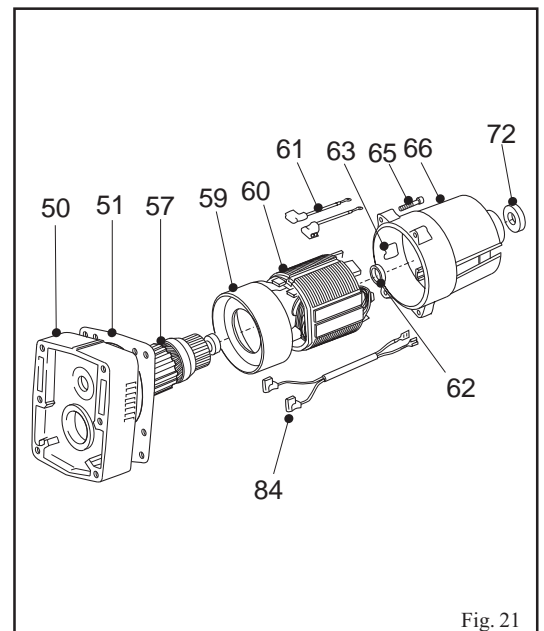


Fig. 21

### Assembly of the rear handle

1. Fit the lower handle support (79) and rubber into the motor housing (73) and secure the lower locking plate (80).
2. Depress the switch (83) trigger and engage the locking button. Fit the unit into the handle front (77) and depress the trigger, ensuring correct location of the switch (83).
3. Identify and connect the switch leads, POS (+) to lower terminal and NEG (-) to upper.
4. Fit the handle rear cover (81), ensure leads are positioned correctly. Fit the handle into lower support rubber and housing (79).
5. Fit the upper support rubber (78) and handle support (79) and locate into motor housing (73). Fit and secure the upper locking plate (80).

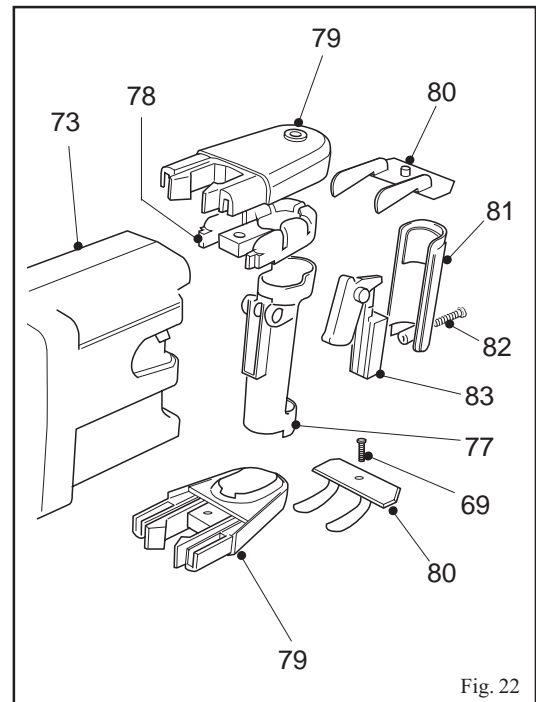


Fig. 22

### Refitting the Motor Housing Assembly

1. Position the motor housing (73) over the bearing housing (50) ensuring correct orientation.
2. Fit the six inserts (74) and their respective Allen bolts (35). **(Torque load to 15 Nm).**

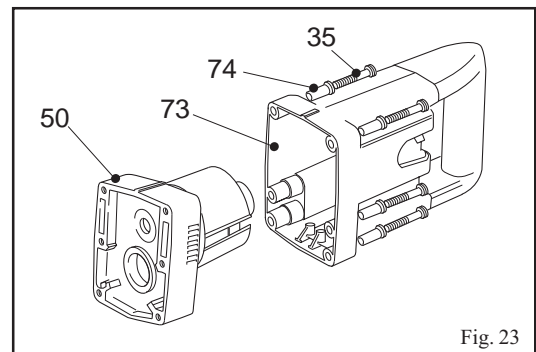


Fig. 23

### Mounting the input terminal block

1. Identify and connect cables to terminal block (87), as shown in diagram opposite.
2. Fit and secure the terminal block mounting plate (86) ensuring correct location of the condenser unit (89). **(Torque load to 0.8 Nm).**

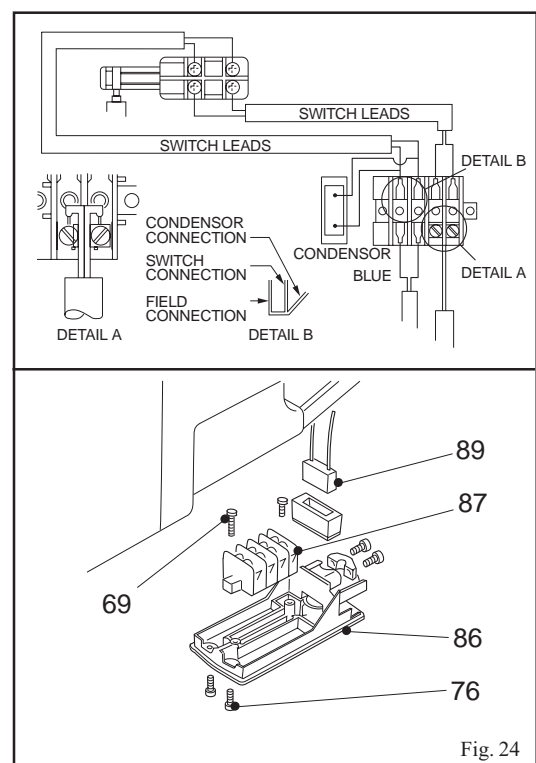


Fig. 24

### Refitting/ Replacing the Brushes

1. Lever the retaining spring (68) upwards and insert the brush(s) (71). Ensure the correct fitting.
2. Secure the brush lead with retaining screw (94).
3. Fit and secure brush covers (75), with screws (76).

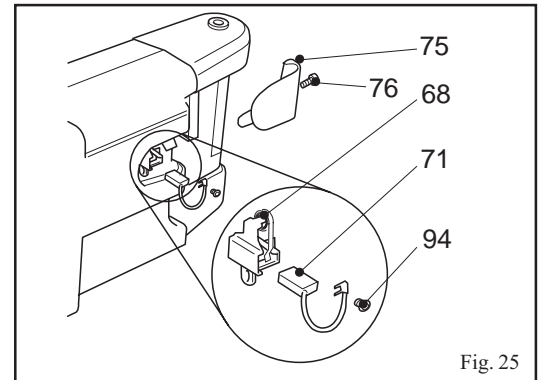


Fig. 25

### Refitting the Barrel Assembly

1. Locate and fit the barrel assembly (37) with the 'cut-out' toward the inclined shaft bearing mount.
2. Temporarily fit the location ring (21) to give correct depth of barrel assembly (37). Press home the barrel assembly (37), ensure the correct alignment of ISB slot.
3. Insert the barrel retaining bracket (38) ensuring correct location of lug. Fit retaining screws (31).
4. Remove location ring (21).

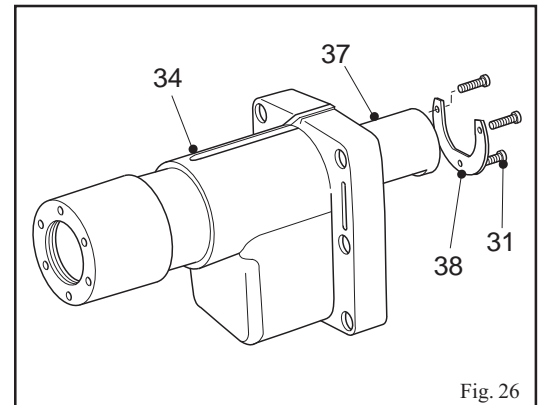


Fig. 26

### Refitting the Striker Assembly

1. Fit bearing clips (24) to striker (23).
- Note:** Fit striker to barrel and check for free movement. If restricted discard the clips for better fit.
2. Fit the Nu-lip Seal (25) to striker (23).
  3. Lightly lubricate the assembly (23) and fit into the barrel.

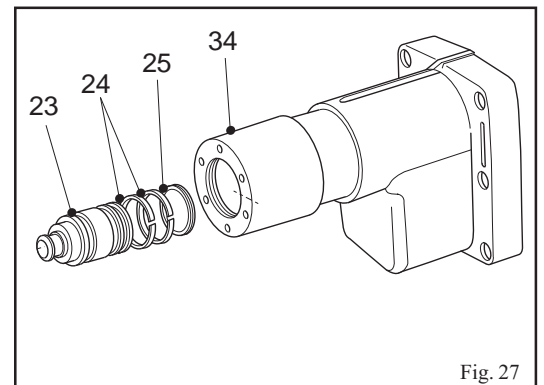


Fig. 27

### Assembly and Refitting the Piston Assembly

1. Fit the gudgeon pin (43) and retainer clip (44) to the piston (45).
  2. Fit the Nu-lip Seal (42).
  3. Fit piston assembly (45), into the barrel (34).
- Note:** Refer to lubrication diagram for piston area lubrication.

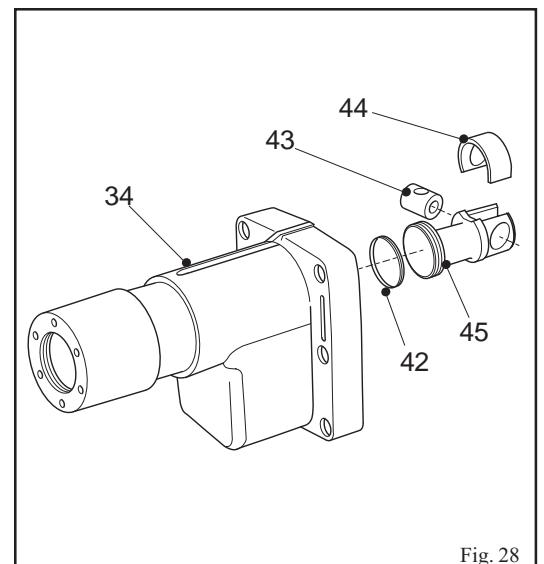


Fig. 28

### Assembling the Inclined Shaft Bearing Assembly

1. Fit the Inclined Shaft Bearing (46) to the Service Tool and fit the layshaft (47). Press the layshaft until seated.

**Note:** Flange on bearing is fitted to flange on layshaft.

2. Locate and fit the gear (48) and the taper forward roller bearing (41) and press on both items to layshaft assembly (47).
3. Fit taper roller bearing (41) onto layshaft assembly.

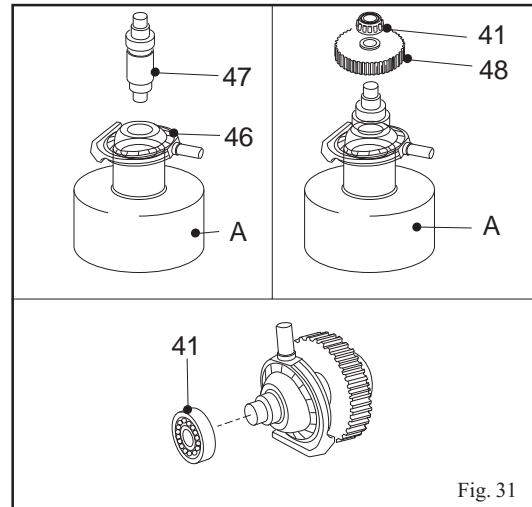


Fig. 31

### Refitting the Inclined Shaft Bearing Assembly

**Note:** Lubricate (34) and (46) layshaft assembly as shown in the lubrication diagram.

1. Fit the eight concave spring washers (39) into the Hammer Case bearing housing (34) as follows:
 

2 x facing inward	}	
2 x facing outward	}	See insert (A)
2 x facing inward	}	
2 x facing outward	}	
2. Place steel washer (40) on to the spring washer assembly (39). Fit the bearing outer (41).
3. Insert the ISB assembly (A) into the Hammer Case (34) ensure the inclined shaft (46) engages with the piston gudgeon pin. Ensure the assembly fits into the bearing housing (34).

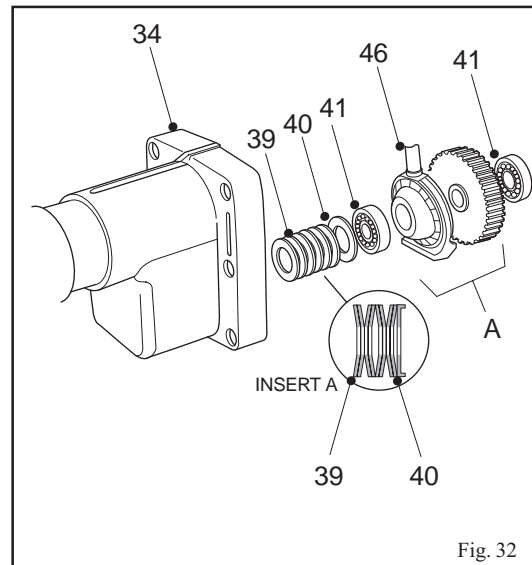


Fig. 32

### Fitting the Hammer Case Assembly

**Note:** Lubricate bearing housing (50) as shown in the lubrication diagram.

1. Align the gasket (49) to the hammer case (50) assembly. Ensure correct orientation.
2. Fit the bearing housing (50) to the hammer case (34) ensure engagement of gears.
3. Secure the two halves with the six Allen bolts (35) and washers (36). (**Torque load to 30 Nm**).

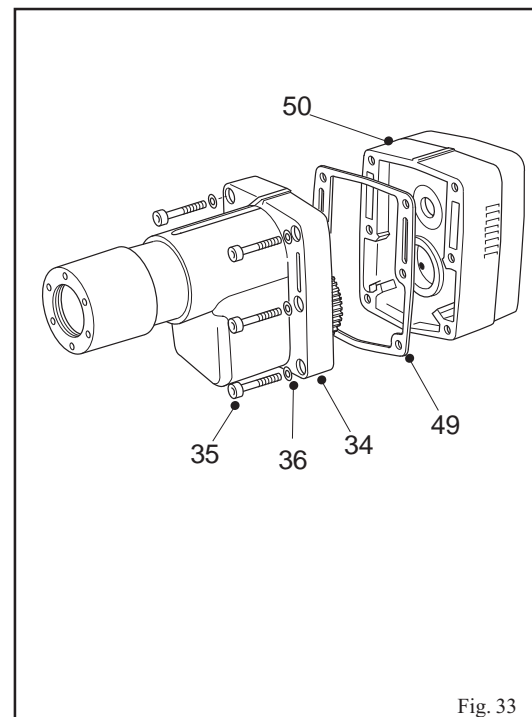


Fig. 33

### Assembly of the Anvil Unit (1400, 1400B)

**Note:** Lubricate parts as shown in the lubrication diagram.

1. Press in the liner (15) into the anvil housing (14).
2. Lightly lubricate the anvil (13) and fit seal assembly (12). Insert anvil (13) into the housing (14) and ensure correct fit.
3. Fit the recoil ring (16), recoil absorber (17), ring (18) and catcher housing (19).

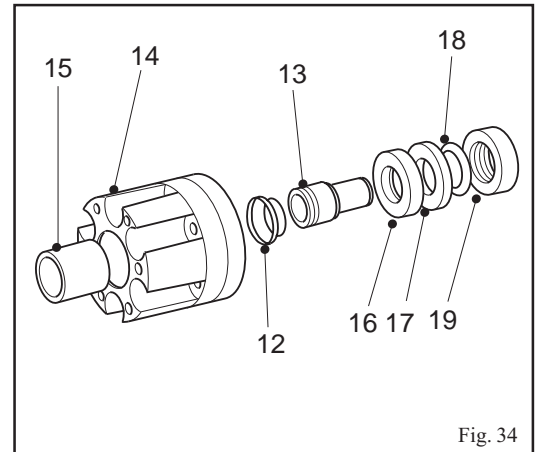


Fig. 34

### Fitting the Anvil and Nosepiece Assemblies (1400, 1400B)

1. Fit two new O-rings (20) to the location ring (21). Fit the location ring (21) to the hammer case (34).
2. Fit anvil housing assembly (14) to hammer case (34) and secure using six allen bolts (35) (**Torque load to 30 Nm**).

**Note:** Cut outs on location ring (21) face the striker.

3. Fit new O-ring (11).
4. Fit new O-ring (3) to the nosepiece (8).
5. Fit nosepiece (8) and secure using six allen bolts (35) (**Torque load to 30 Nm**).

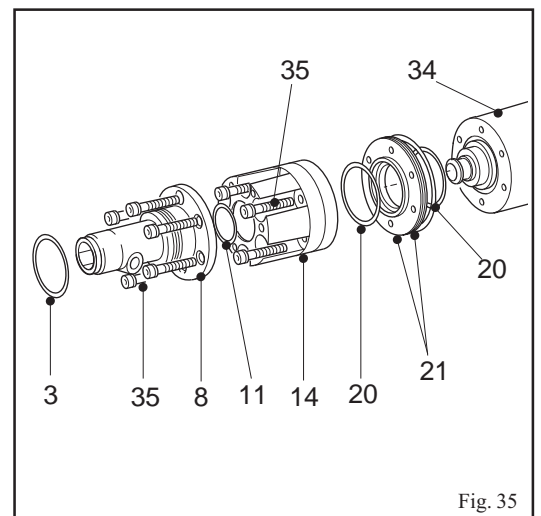


Fig. 35

### Fitting the Front Handle Assembly (1400, 1400B)

1. Position the strap casting (26) over the hammer case (34).
2. Fit the nose cap (2) over the nosepiece (34) ensuring correct location of the cut-out over the strap casting (26). Fit the retaining circlip (1).
3. Expand the front handle (30) and engage over the strap casting (26).
4. Position the handle (30) horizontally to the rear handle and fit the retaining bolt (27) through the front handle (30) and secure with washer and plastic knob (28).

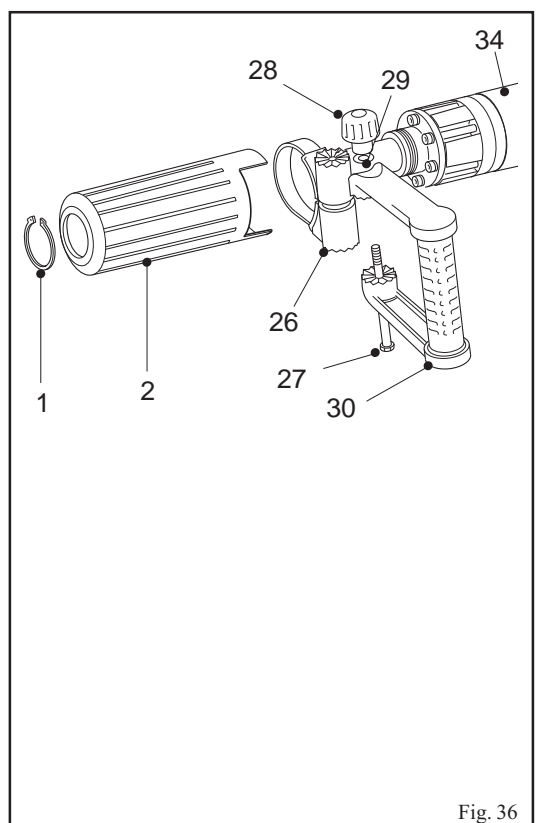


Fig. 36

### Fitting the Tool Locking Mechanism (1400, 1400B)

1. Insert the latch bar (4) into the hole of the nosepiece (8).
2. Fit the spring cover (5), spring (6) and latch retainer (7) over the latchbar.
3. Using a suitable drift, tap the latchbar (4) into the latchbar retainer (7).

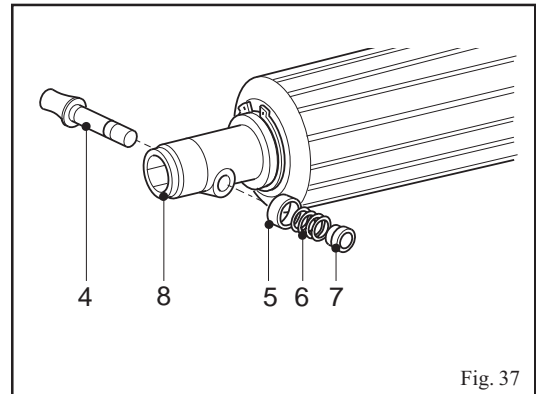


Fig. 37

### Fitting the Driver (1400M)

1. Fit seal (12) on anvil (119), fit anvil (119), recoil TR ring (125) and junk ring (123).
2. Fit the following items:
  - junk ring (118)
  - 'O' ring (126)
  - driver (117)
  - 'O' ring (126)
3. Fit the following items and secure using six screws (35):
  - trans housing (124)
  - 'O' ring (121)
  - nose cover (120)
  - nose piece (115)
  - four balls (114)

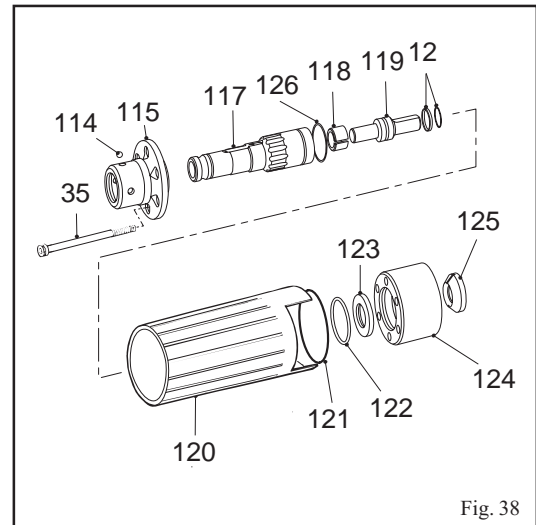


Fig. 38

### Assembling the SDS assembly (1400M)

1. Fit the following items and secure using two latches (108):
  - lock chuck (112)
  - lock plate (111)
  - spring (110)
  - latch plate (109)
2. Fit the following items and secure using wire clip (104):
  - SDS chuck (107)
  - buffer (106)
  - buffer stop (105)
3. Fit chuck cover (103) and end cap (102).

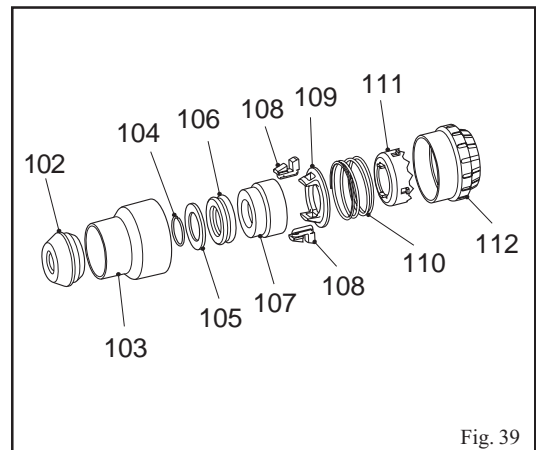


Fig. 39



### WARNING LETHAL VOLTAGES PRESENT!!

**Important** On completion of the assembly, the unit must be flash tested at 4000 volts.

- Flash Test**
1. With the breaker completely assembled and with the switch “ON” apply 2000 volts initially and increase rapidly to 4000 volts between the main casting and one of the pins of the plug on the power supply cord. Apply test to both live and neutral pins.
  2. The full voltage of 4000 volts should be maintained without breakdown or flashover for a few seconds.
  3. If the armature has been tested, remove the carbon brushes before carrying out the test, (thus avoiding over-stressing the armature insulation system.)
  4. The test voltage must be applied between the main casting and each live pin of the plug in succession.

**Running Test** 1. Ensure the unit is switched ON before testing. Operate the unit for approx. 10 minutes at **half** voltage for initial ‘bedding in’ of the carbon brushes followed by full operational voltage. Compare readings with Performance Data.

## FAULT FINDING

With the aid of the Fault Finding chart (below) the source of any malfunction may be quickly identified and repaired.

