



ROCKCRETE
EQUIPMENT(PTY) LTD
Company Reg. No: 1947/24677/07

**OPERATORS MANUAL
FOR
ROCKCRETER 45**



SOUTH AFRICAN SHOTCRETE TECHNOLOGY
Designed to perform, the power to succeed!

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As part of our policy of constant product development and improvement information and specifications contained in this document are liable to change.

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1. SAFETY PROCEDURES

Recommended items to keep gunning safe:

- a. Hard hats.
- b. Safety goggles.
- c. Dust masks in confined spaces or unventilated areas.
- d. Good lighting.
- e. Whip check cables and chain safety couplings on air supply hoses.
- f. Rubber gloves to protect workmen with skins sensitive to cement burns (also use barrier cream).
- g. Sturdy and safe lifting devices, platforms and scaffolding for those many gunning operations that are performed off the ground. All platforms should be equipped with safety rails.
- h. A qualified electrician must do all electrical connections.
- i. Do not remove the screen/sieve supplied on the hopper whilst the machine is in operation.
- j. Do not carry out any maintenance whilst the air or electrical connections are connected to the machine.
- k. Do not poke or prod any instrument of any sort into the hopper whilst the machine is in operation.

2. TECHNICAL SPECIFICATIONS

Height	900 mm
Width	600 mm
Length	900 mm
Weight	+ -120kg
Output	Up to 4 tonnes/hr
Drive 220 V/380 V /525 V	Drive 220 V/380 V /525 V
Option Variable Speed	Option Variable Speed
Air Required for Electric	4 - 6 bar @ 240 c.f.m.
Air Required for Air	4 - 6 bar @ 450 c.f.m.

3. PRINCIPLES OF OPERATION

- a. Sand aggregates and cement are first mixed thoroughly and then fed into the machine hopper.
- b. The mix is gravity fed down the hopper into the rotor which has several chambers and is sealed by two rubber wear pads and two wear plates.
- c. As the rotor rotates, air is introduced which discharges the mix down through the outlet bend underneath the rotor.
- d. The discharge spout has a special reinforced hose connected to it. The material is now transported by a stream of air to the nozzle.
- e. At the end of the hose is the nozzle with a water connection and a water injection system.
- f. The nozzle operator adjusts the tap and injects the correct amount of water into the stream of material.
- g. The nozzle operator now places the material on to the working surface as required.

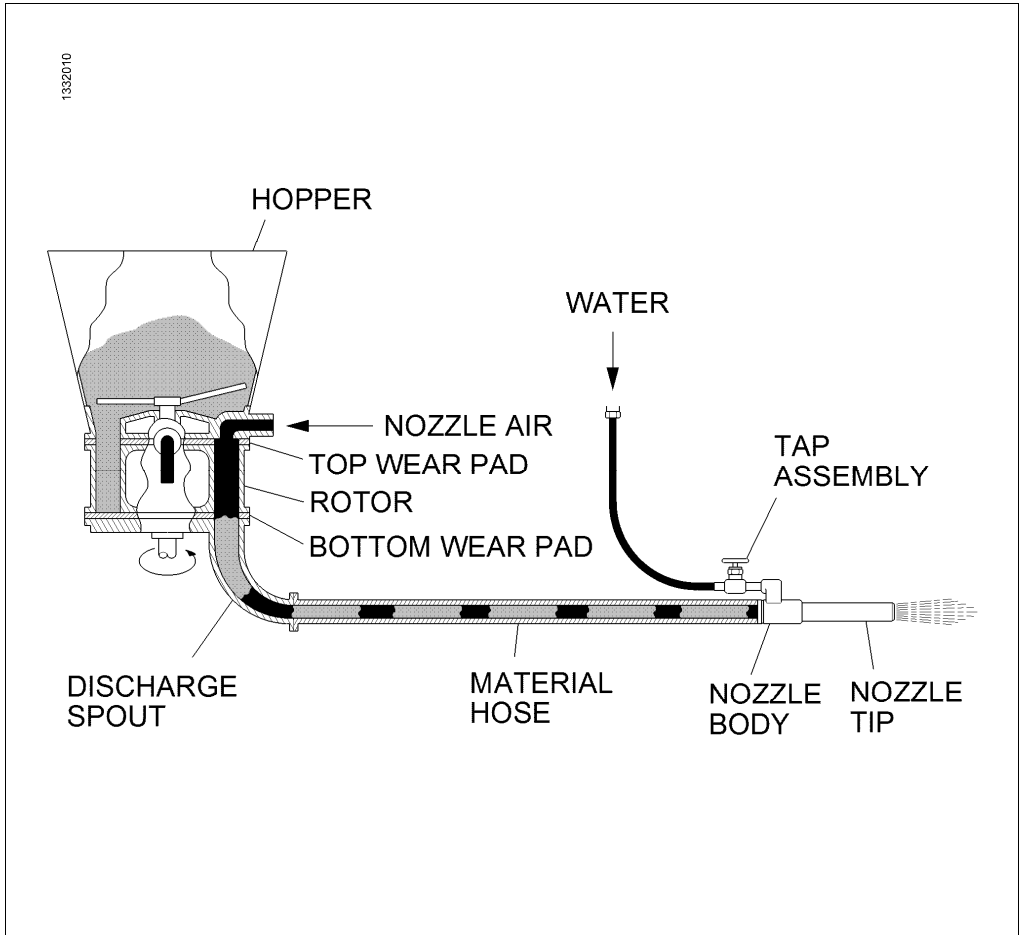
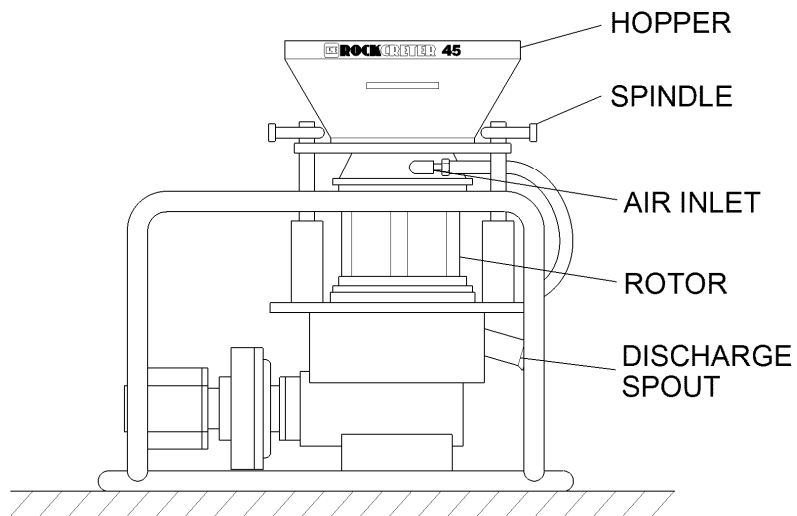


Figure 1

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RE ROCKCRETER 45

Figure 2

4. OPERATING PROCEDURES

IMPORTANT

MAKE SURE THAT THE AGGREGATES HAVE A MOISTURE CONTENT OF AT LEAST 5% PRIOR TO MIXING THE CEMENT. THIS WILL REDUCE DUST AT THE NOZZLE AND REBOUND AT THE WORKING FACE.

4.1 Machine Setting

1. First hand-tighten the two spindles on the air inlet side.
2. Tighten the other spindle to the same tension to ensure the clamping is even.
3. The first two spindles can be adjusted slightly more as this is where most pressure takes place.

4.2 Starting Up Procedure

1. Open the air valve to the nozzle and check air supply with nozzle operator.
2. Open water tap at nozzle and check for water supply.
3. Fill the hopper with material.
4. Open the valve to the air motor/switch on electric motor.

NOTE

All gunite/shotcrete machine rotors turn anti-clockwise.

4.3 Shutting Down Procedure

1. Allow hopper to empty of all material.
2. Close air valve to motor or switch off to stop the rotor.
3. Allow material hose to clear.
4. Close the water tap at the nozzle.
5. Close air valve to nozzle after all materials are cleared out of hose.

4.4 Checking Output

To attain the maximum output for the machine the rotor must run at the correct speed. The output may vary with different materials. The rotation speed must allow the chambers to fill completely while giving an even flow at the nozzle. This will enable the operator to achieve the maximum output at the lowest running cost.

5. MAINTENANCE PROCEDURES

5.1 Daily Maintenance Routine

It is important to appoint a member of the gunite crew who is solely responsible for the maintenance and operation of the gunite/shotcrete machine. The machine operator should liaise with the nozzle operator as to what speed the machine runs at to control the output and also to regulate the airflow to the nozzle operator. This will regulate the daily production and control waste due to rebound.

REMEMBER

DUE TO THE FACT THAT THE MACHINE OPERATES WITH SAND AND CEMENT, WHICH MAY VARY IN MOISTURE CONTENT, THE MACHINE MUST BE CLEANED AFTER EACH SHIFT OR IF LONG STOPPAGES OCCUR.

5.2 Cleaning Procedure

1. Before switching off the machine, let the hopper empty and blow the delivery hoses clear.
2. Disconnect power and/or air to the motor.
3. Strip the machine, clear loose material and remove any build-up which has occurred.
4. Inspect wearing parts such as top and bottom wear pads and wear plates for uneven or excessive wear.

REMEMBER

IT IS NOT ADVISABLE TO REPLACE A WORN PAD AND NOT THE MATCHING WEAR PLATE AS THIS WILL RESULT IN THE PAD WEARING MUCH QUICKER. (CHANGE AS SET).

5. Once the machine has been properly cleaned and re-assembled, it is good practice to apply grease to the pads to prevent binding when the machine is restarted (red rubber grease is recommended).
6. Remove the nozzle tip and inspect the water ring to see if the holes are clear, apply grease and replace. The machine is now ready for the next operation.

IMPORTANT

LIAISE WITH YOUR MANUFACTURER OR SUPPLIER AS TO WHICH OILS SHOULD BE USED IN THE LUBRICATOR FOR THE AIR MOTOR.

5.3 Hoses

Only use hoses recommended by your supplier. To obtain the best results observe the following.

1. Always use a sieve on your machine to avoid blockages.
2. Avoid sharp bends when using hoses.
3. Fit couplings flush with end of hoses.
4. Do not use badly worn hoses. This can be dangerous.

6. TROUBLE SHOOTING

FAULTS	POSSIBLE CAUSE
Excessive rebound.	<ul style="list-style-type: none">a. Sand too dry or wrong grading.b. Poor water pressure at nozzle or blocked water ring.c. Machine not set correctly.d. Nozzle man not applying correctly.
Machine blowing excessively.	<ul style="list-style-type: none">a. Machine not set correctly.b. Plates or pads need replacing.c. Blockage in system.
Uneven running.	<ul style="list-style-type: none">a. Pad clamped too tight.b. Material between plates and pads.c. Bent main shaft.
Insufficient output.	<ul style="list-style-type: none">a. Moisture of sand too high.b. Poor air supply.c. Blockage in system.d. Machine not set correctly.
Surging at the nozzle.	<ul style="list-style-type: none">a. Machine running at incorrect speed.b. Moisture content of sand too high.c. Blockage in system.
Rotor running too slowly.	<ul style="list-style-type: none">a. Poor air supply.b. Exhaust blocked.c. Machine clamped too tight.d. Motor not lubricated or vanes worn.

NOTE

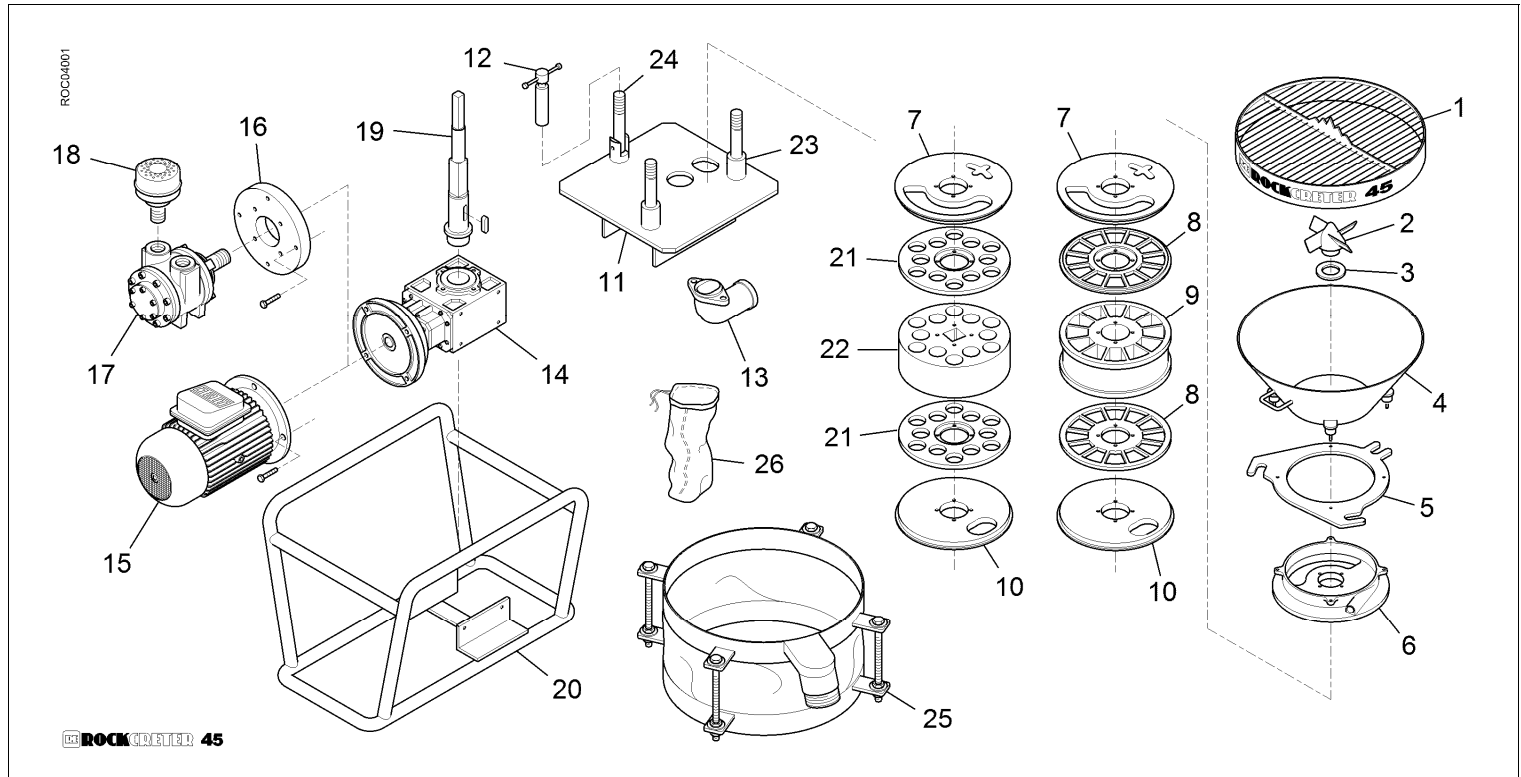
Should you experience any other problems contact your supplier.

ILLUSTRATED PARTS CATALOGUE

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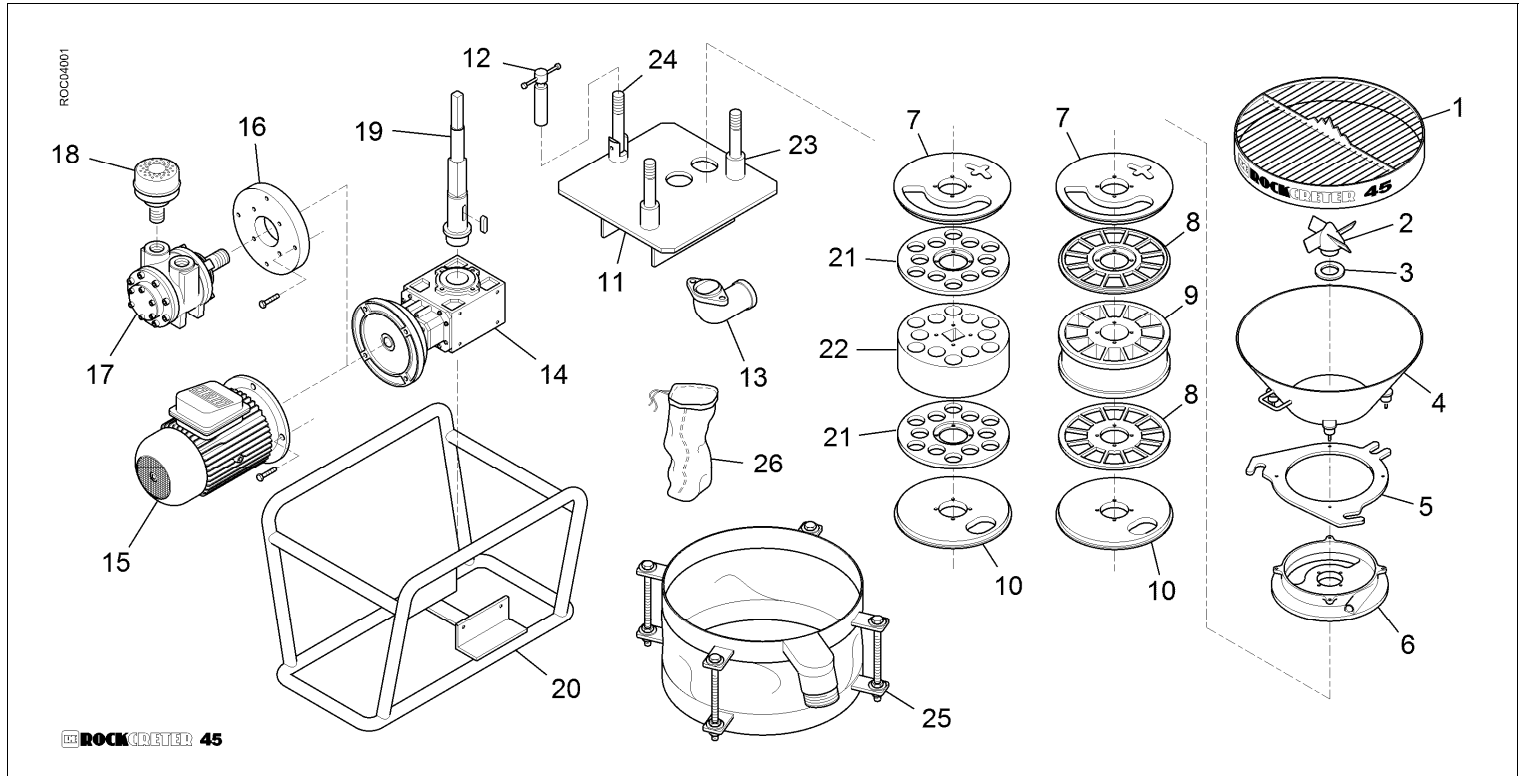
1. ROCKCRETER 45 ASSEMBLY



1. ROCKCRETER 45 ASSEMBLY

ITEM NO	DESCRIPTION	PART NO	QTY	COMMENTS
1	SIEVE	EA001A	1	
2	AGITATOR SPIDER	EA012	1	
3	GASKET, AGITATOR SPIDER	EA013	1	
4	HOPPER	D001	1	
5	RING, TOP, CASTING	D005	1	
6	TOP CASTING	D004	1	
7	WEAR PAD, TOP	D009	1	
8	WEAR PLATE, SQUARE SECTOR	D006S	2	
9	ROTOR, HALF SQUARE SECTOR	D007SE	1	
10	WEAR PAD, BOTTOM	D010	1	
11	BASE (COMPLETE)	D011C	1	
12	CLAMP, SPINDLE	D003M	1	
13	DISCHARGE SPOUT	D016M	1	
14	GEARBOX	EA010A	1	
15	MOTOR, ELECTRIC	EA023	1	
16	FLANGE, AIR MOTOR	EA022	1	
17	MOTOR, AIR	RC10	1	
18	MUFFLER, AIR MOTOR	EA002	1	
19	SHAFT MAIN	D021M	1	
20	FRAME	D100	1	

1. ROCKCRETER 45 ASSEMBLY (CONTINUED)

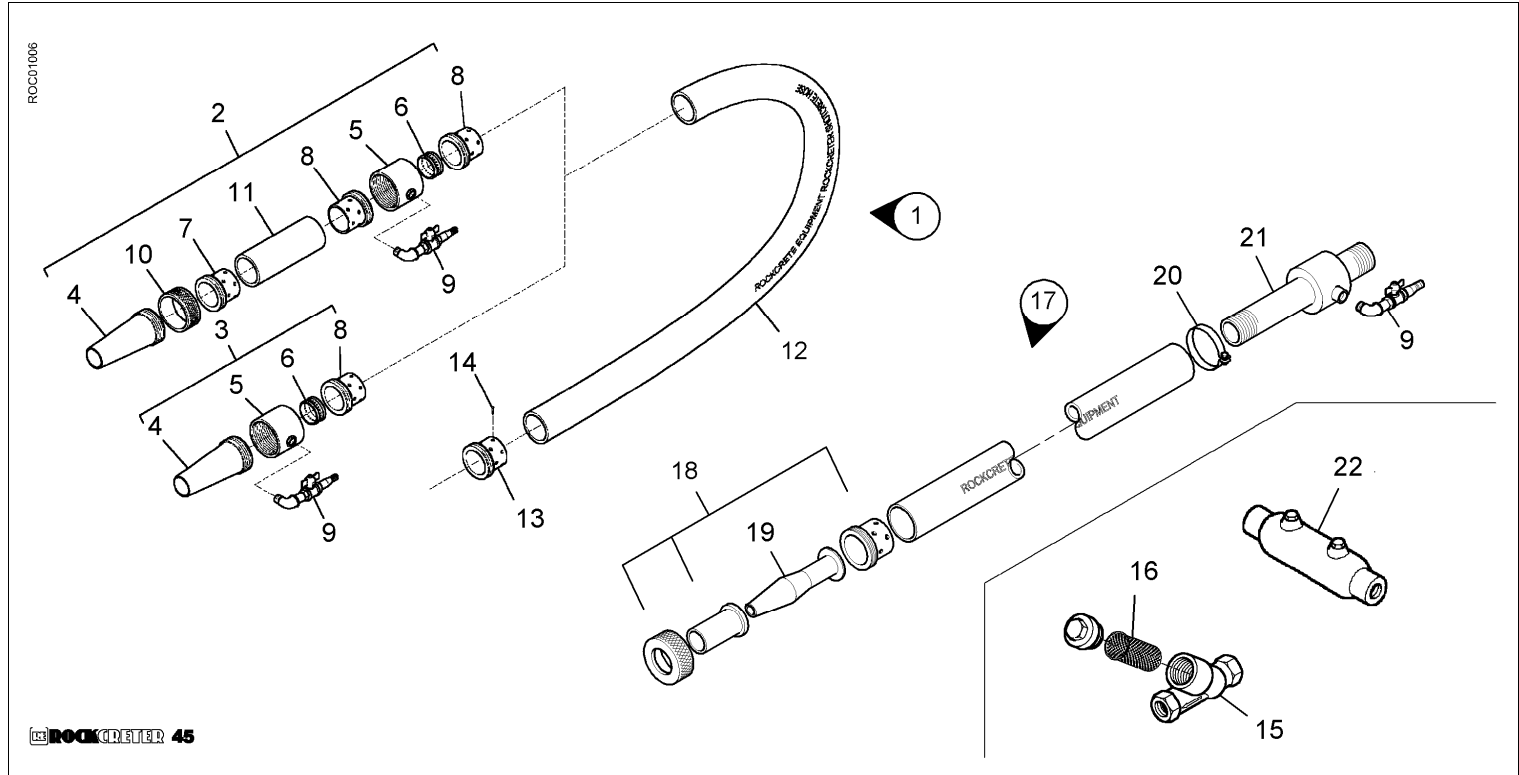


ROCKCRETER 45

1. ROCKCRETER 45 ASSEMBLY

ITEM NO	DESCRIPTION	PART NO	QTY	COMMENTS
21	12 HOLE ROUND HOLE WEAR PLATE	D006E	2	
22	12 ROUND HOLE ROTOR	D007E	1	
23	RC45 SOLID SUPPORTS	D029	2	
24	RC45 SWIVEL ARM	D030	1	
25	DUST SKIRT	D024S	1	
26	DUST COLLECTOR	EA024S	1	

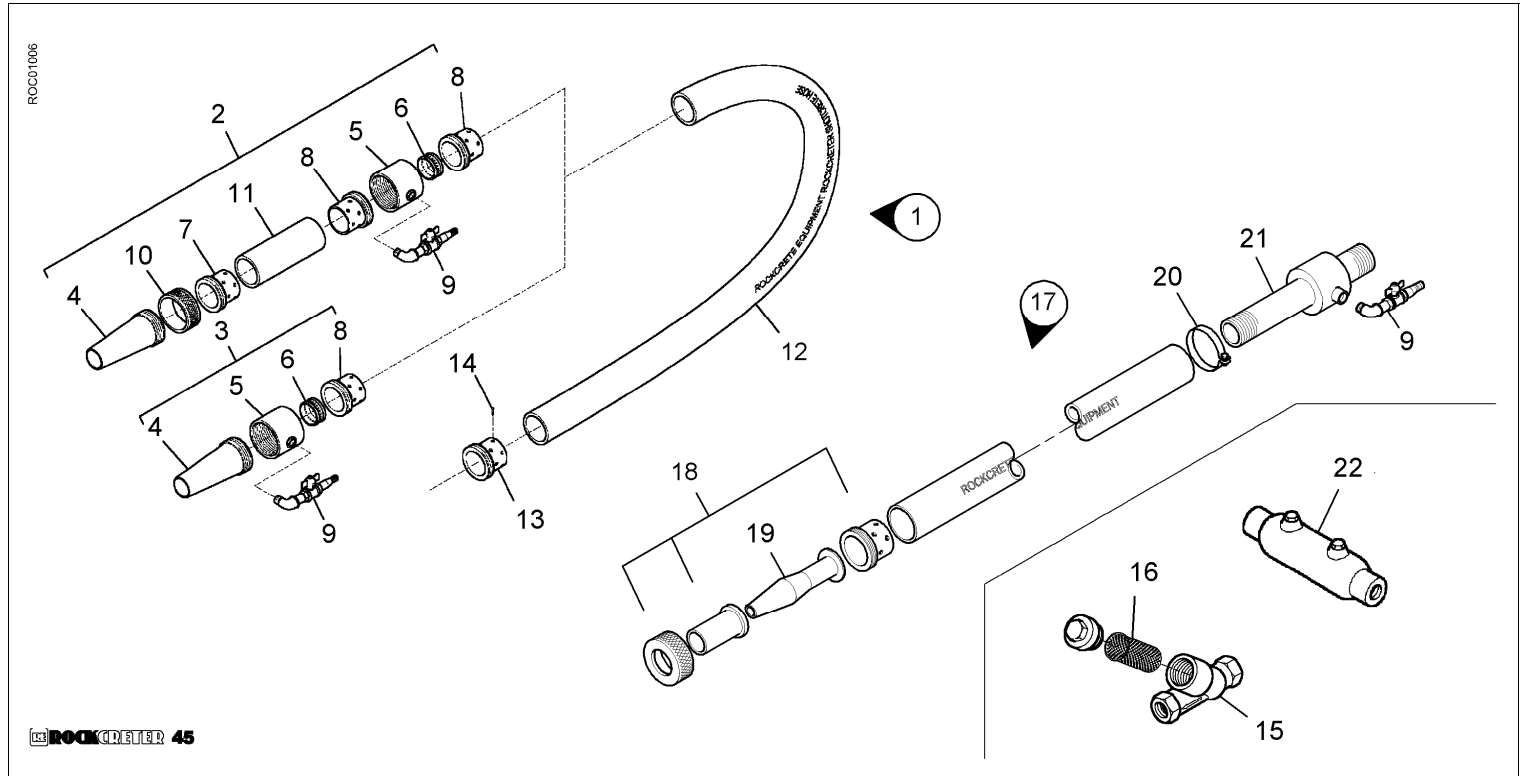
2. HOSE ASSEMBLY



2. HOSE ASSEMBLY

ITEM NO	DESCRIPTION	PART NO	QTY	COMMENTS
1	38 MM X 15 M HOSE AND NOZZLE SYSTEM	E019C	1	
2	38 MM PRE MIX NOZZLE SYSTEM	E040	1	
3	38 MM NOZZLE SET COMPLETE	E034	1	
4	TIP, NOZZLE, 38 MM	E031	1	
5	NOZZLE BODY	E027	1	
6	WATER RING, 38 MM	E026	1	
7	COUPLING, SHOULDER 38 MM	E029	1	
8	THREADED COUPLING	E028	1	
9	TAP, WATER ASSEMBLY	E013	1	
10	NUT, COUPLING, 38 MM	E030	1	
11	HOSE PIECE, 500 MM X 38 MM	As Required	1	
12	HOSE, 38 MM X 62 MM X 15 M	E019	1	
13	COUPLING, 61 MM ID	E016	1	
14	HOSE SCREWS	BS13	BOX 100	
15	DIRT TRAP	EA007	1	
16	DIRT TRAP FILTER	EA007A	1	
17	REFRACTORY NOZZEL ASSEMBLY	E036	1	
18	FOUNDRY COUPLING SET	E032	1	
19	REFRACTORY NOZZEL	E035	1	
20	CLAMP	E033B	1	

2. HOSE ASSEMBLY (CONTINUED)



2. HOSE ASSEMBLY

ITEM NO	DESCRIPTION	PART NO	QTY	COMMENTS
21	38MM WATER MIXER	E033	1	
22	LUBRICATOR, CYLINDER TYPE	EA005	1	

