NOISE ATTENUATION
DEVICES IN
PNEUMATIC ROCK DRILLING MACHINES

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NOISE ATTENUATION DEVICES IN PNEUMATIC ROCK DRILLING MACHINES

LATEST DEVELOPMENTS

EXHAUST MUFFLING IN HAND HELD DRILLS
EXHAUST MUFFLING IN LONG HOLE DRILLING MACHINES
VARIOUS SOURCES OF NOISE WHEN DRILLING

1. Exhaust noise
2. Mechanical noise
3. Drill steel ringing
4. Steel on steel on rock
5. Ambient noise
6. Echo
LIGHTWEIGHT PNEUMATIC JACKHAMMER DRILLING IN SOUTH AFRICAN PLATINUM MINE STOPE.

UN-MUFFLED TYPE.
CONVENTIONAL MUFFLED JACKHAMMER

COMMERCIALY AVAILABLE FOR THE LAST 35 YEARS

WHAT CAN BE DONE TO ENHANCE THE MUFFLING EFFECT

THE ANSWER IS TO “DESTRUCT” THE PULSATING EFFECT OF COMPRESSED AIR ESCAPING FROM THE EXHAUST PORT

BUT HOW?”
BUT HOW?”

EXHAUST TUBE

MUFFLE BOX

CYLINDER BORE

SECTION THROUGH ROCKDRILL CYLINDER
TO IMPINGE ONE JET OF PULSATING AIR AGAINST ANOTHER TO BREAK UP THE PULSES
DESIGN REQUIREMENTS OF AN IMPROVED MUFFLE SYSTEM.

LIGHT WEIGHT
BUILT IN NOT BOLT ON
EFFECTIVE
DOESN’T AFFECT DRILLING PERFORMANCE
CHEAP
THE RESULT IS “SECOND GENERATION” EXHAUST MUFFLING
CLOSE UP OF 2nd GENERATION EXHAUST MUFFLE

RESULTS AT 5 Bar
UNMUFLED 111 dBA
2nd GENERATION MUFFLING 103 dBA
SABS 1470 part IV-1990
FREE FIELD TESTING

Note: For determining geometric centre, feed leg not considered part of the machine.
6 POINT NOISE LEVEL MEASUREMENT FOR EACH DRILL TESTED AT C.S.I.R. MINING TECH JULY 2008.

AT 5 Bar UNMUFLED 111 dBA
WHAT OF LONG HOLE DRIFTER DRILLING?
THE NOISE ISSUE LONG HOLE DRILLING

S36M MUFFLED DRIFTER

DESIGN REQUIREMENTS

WEIGHT IS NOT AN ISSUE
BUILT IN NOT BOLT ON
EFFECTIVE
DOESN’T AFFECT DRILLING PERFORMANCE
OTHER ENHANCEMENTS
THE RESULT IS THE S36M MUFFLED DRIFTER

EFFECTIVE BUILT IN MUFLLING SYSTEM OF MULTIPLE SWIRL CHAMBERS AND EXHAUST TUBES
REVISED PERCUSSIVE ELEMENT CHARACTERISTICS
EXTERNAL WATER FEED
NO WATER TUBE
NUMEROUS OTHER ENHANCEMENTS
Fig. 3 - Noise Measurement Arrangement with Microphone Positions for Track-drills
TESTING THE S36M MUFFLED DRIFTER

FROM 117 dBA to 108 dBA
TESTING THE S36M MUFFLED DRIFTER
THE NOISE ISSUE LONG HOLE DRILLING

S36M MUFFLED DRIFTER

FROM CONCEPT TO REALITY

COMMERCIALY AVAILABLE FROM SEPTEMBER 2008
Tranter!!!!!! Guaranteed lowest cost per metre drilled solutions