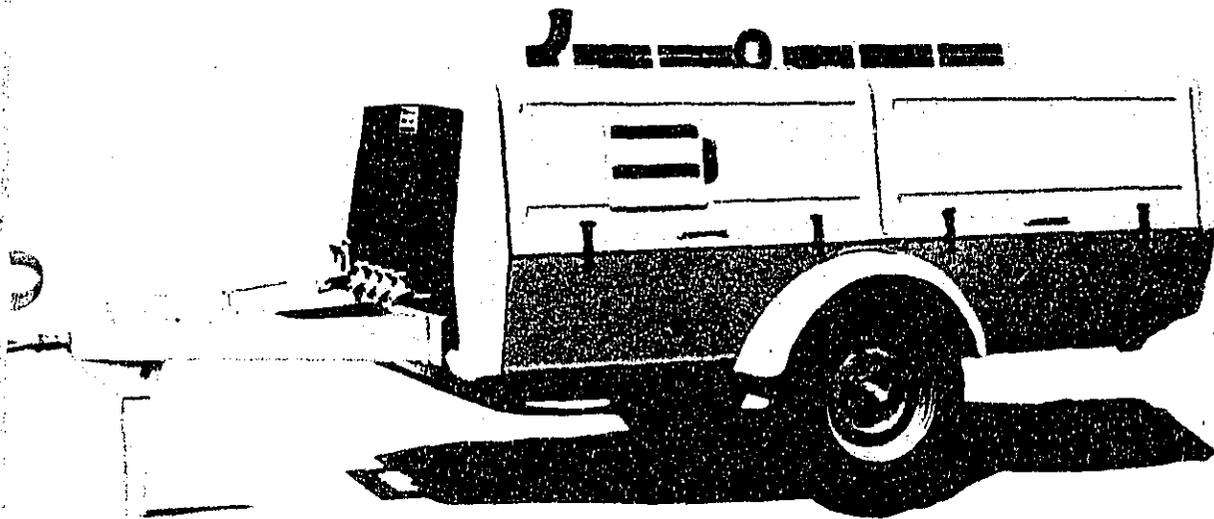


**bq** BUY QUIET

n-96-01  
II-A-596

PRODUCT INFORMATION SUPPLEMENT No. 8  
PRODUCT NOISE INFORMATION SERIES  
NOVEMBER 1981

INFORMATION ON NOISE LEVELS, NOISE MEASUREMENT  
METHODS AND "BUY QUIET" EXPERIENCES ASSOCIATED  
WITH PORTABLE AIR COMPRESSORS



Portable Air Compressors

AN INFORMATION SUPPLEMENT FOR GOVERNMENTAL PURCHASING  
AGENTS IN DEVELOPING "BUY QUIET" PROGRAMS

THE NATIONAL INSTITUTE  
OF  
GOVERNMENTAL PURCHASING  
1735 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VIRGINIA 22202

## PREFACE

This supplement is intended to help governmental purchasing agents and other officials purchase quieter, more energy-efficient portable air compressors through the competitive bidding process. It contains a portable air compressor purchase description which was developed at a government-industry conference hosted by the National Institute of Governmental Purchasing in June 1981. This conference was the third in a series of such conferences that NIGP is conducting on different products.

This supplement is a companion document to the Guide to Purchasing Quieter Products and Services<sup>1</sup> which describes in general terms how noise considerations can be incorporated into purchasing decisions. Together, these documents and others available through the Quiet Product Data Bank maintained by NIGP can help you develop a "Buy Quiet" Program for your government.

1. Issued by NIGP, June 1981

ACKNOWLEDGEMENT

This supplement and the suggested purchase description contained herein are products of the voluntary efforts of many organizations and individuals.

For their contributions to the development of suggested purchase description, we take this opportunity to thank:

- \* Brady Moore, of the Washington Suburban Sanitary Commission (Hyattsville, Maryland);
- \* Don Carte, of the State of West Virginia;
- \* Paul M. Sullivan, of the State of Connecticut;
- \* William F. Marshall, of the State of New Jersey;
- \* Robert Newbegin and Chris Wrzenski, of the State of New York;
- \* Sidney Bloom, of the Federal Supply Service, G.S.A.;
- \* Jim Anselmi, of the Port Authority of New York and New Jersey;
- \* Huburn B. Eyres, CPPO, of Passiac County, New Jersey;
- \* William J. Feely, of Steuben County, New York;
- \* Rich Geney of Atlas Copco, Inc.
- \* Glen Juergensen, of the Grimmer Schmidt Corp;
- \* George Raitt, of the Ingersoll-Rand Equipment Corp;
- \* Charlie Canessa, of LeRoi/Dresser Industries, Inc;
- \* Ron Oren and Len Potts, of Sullair Metropolitan;
- \* Stanley B. Durkee, of the U.S. EPA; and
- \* Stephen B. Gordon and Lewis E. Spangler of the NIGP.

For the development of a procedure to measure the fuel consumption rate of portable air compressors, we thank the staff and membership of the Compressed Air and Gas Institute.

Steve Gordon and Stan Durkee prepared the text of this supplement.

\* Warren K. Wright, CPPO  
City Purchasing Agent  
Rochester, New York  
Chairman, NIGP Technical  
Development Committee

\* Stanley D. Zemansky, CPPO  
City Purchasing Agent  
Baltimore, Maryland  
President, NIGP

CONTENTS

Introduction

Section 1. Description of the Product

Section 2. Quiet Portable Air Compressor Purchase Description

"Buy Quiet"/"Energy Efficient" Bid Evaluation Formula

Appendices

- A. Compressed Air and Gas Institute  
Recommended Fuel Consumption Test  
Procedure for Portable Air Compressors
- B. List of Manufacturers
- C. Buy Quiet Experience
- D. Sources of Additional Information

## INTRODUCTION

The "Buy Quiet" Program is a new concept in which governments cooperate with each other to buy quiet models of equipment. It is being extended with the help of the National Institute of Governmental Purchasing, the National League of Cities, other national organizations, and various local and state agencies. This type of local noise control:

- . costs very little;
- . requires little additional effort;
- . begins the community quieting process;
- . establishes market pressures;

Surveys have shown that noise is the most frequently identified undesirable neighborhood condition in urban areas. Scientists and the medical profession now tell us that noise is no longer a mere irritant, but that in fact it has a very adverse impact on our health and well being. You as a purchasing officer can reduce noise in your community by purchasing quieter products. State and local governments and large private organizations spend billions of dollars each year on equipment such as compactors, chain saws, typewriters, lawnmowers, trucks, motorcycles, pneumatic drills, and buses. If these governments can become more selective so as to purchase quieter products, cities and neighborhoods will be quieter.

## Section 1. Description of the Product

Portable air compressors are designed mainly to power pneumatic tools and equipment at a construction job site. Primary applications include the generation of air power for:

- \* Operating hand tools
- \* Tunneling operations
- \* Mixing and atomizing to shoot fine particle material into place
- \* Pneumatic conveying of small particle material
- \* Air-operated centrifugal pumps
- \* Air-powered hoist-drum or brakes
- \* Snow production

Compressors generally are rated according to maximum flow rate at a pressure of 100 pounds per square inch (psi). Portable air compressors used at construction sites generally range in flow capacity from a low of 75 cfm to a high well in excess of 2000 cfm.

Almost all large units are diesel-engine driven. The intermediate-sized units are diesel and gasoline-engine driven, while the smaller types are primarily gasoline-engine driven.

The portable compressors of interest here are designed to be towed on two or four rubber-tired wheels. They have weights ranging from 1/2 to 14 tons, lengths ranging from 5 to 19 feet, and heights ranging from a little less than 4 feet to almost 10 feet. The portable compressor includes an air receiver, the driving engine, cooling system, fuel tanks, tool boxes, running gear, and an enclosure making it a self-contained compressed air power system. The enclosure itself, when designed for noise insulation, can comprise as much as 10% of the total weight and as much as 20% of the total cost.

Section 2. Quiet Portable Air Compressor Specification and Other Related Information

Definition of Terms

NOISE: Any undesired sound.

SOUND LEVEL METER: An instrument, consisting of a microphone, an amplifier, an output meter, and frequency-weighted networks, that is used for the measurement of sound levels in a specified manner.

DECIBEL: The intensity of a sound often abbreviated dB. The decibel scale was devised to measure the smallest difference in sound which is detectable by the human ear. Its graduations move up not in a simple arithmetic progression but in a multiple progression based on logarithmic calculations. This means that each increase of one decibel represents a much larger change of intensity than might be expected. Because of the logarithmic progression of the decibel scale, an increase of ten decibels, for example, reflects a ten-fold increase in sound energy, but is perceived as being approximately twice as loud. Thus sound which is measured at 80 dB contains ten times the sound output and is perceived as being twice as loud as a sound that is measured at 70 dB.

dba: An expression of sound level taking into account the response of the human ear to sound.

Section 2. Quieter Portable Air Compressor Specification and Other Related Information-continued

The National Institute of Governmental Purchasing (NIGP) has developed a single purchase description which can be used as a standard specification for purchases of all or most portable air compressors by a government or agency. This standard specification contains two salient elements to achieve quiet, with the second of the two directed also at reducing fuel consumption and costs. These elements are:

- (1) A maximum noise level requirement of 76 dBA for portable air compressors in each of the flow capacity categories shown in Table 1. The known range of noise levels in the 50-190 CFM Category is 65 dBA to 78 dBA; in the 190-750 CFM Category, 69 dBA to 76 dBA; and, in the 800-1600 CFM Category, 72 dBA to 76 dBA.
- (2) An optional bid evaluation formula which permits a government or agency to purchase quieter, more energy-efficient, and slightly more expensive portable air compressors through the competitive bidding process. Quieter, more energy-efficient compressors may, but do not necessarily, cost more. Before using this optional method of bid evaluation, governmental purchasing officials should verify with their counsel their authority to do so.

The purchase description asks the bidder to provide the fuel consumption rate of the compressor he offers based on the "Compressed Air and Gas Institute Recommended Fuel Consumption Test Procedure for Portable Air Compressors." This procedure was prepared by the Compressed Air and Gas Institute (CAGI) as a result of the government-industry conference hosted by NIGP in June 1981.

The CAGI procedure measures the fuel consumption rate of portable air compressors in "gallons per hour" when running at full load, and for the first time provides a standard, industry-wide basis for comparing fuel efficiency. Governments should ask for fuel consumption rates based on this procedure since it does provide an objective basis of comparison (i.e., apples vs. apples). The user should bear in mind, however, that real-life conditions involve a mix of full load, part load, and idle speed operation. Consequently, rates obtained through use of the procedure may differ from rates obtained through actual use.

A copy of the current CAGI procedure, dated August 26, 1981, appears in this product information supplement following the "NIGP Purchase Description for Portable Air Compressors."

NIGP Purchase Description

for

Portable Air Compressors

## NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING, INC.

NIGP Purchase Description  
Portable Air Compressors  
FSC  
June 26, 1981  
As Revised August 28, 1981

This purchase description has been prepared by the National Institute of Governmental Purchasing, Inc. (NIGP), in cooperation with the Federal Supply Service, GSA, local and state purchasing agencies, industry representatives, and the Compressed Air and Gas Institute (CAGI). It includes a maximum noise level and an incentive to bidders for offering models that are even quieter and more energy-efficient.

### 1. SCOPE AND CLASSIFICATION:

- 1.1 SCOPE: This purchase description is for portable air compressors.
- 1.2 CLASSIFICATION: Diesel or gasoline powered, to be trailer mounted.

### 2. APPLICABLE PUBLICATIONS:

- 2.1 U.S. Environmental Protection Agency Air Compressor Noise Test Procedure
- 2.2 Federal, State, and Local OSHA Requirements of latest issue.
- 2.3 ASME PTC Power Test Code of latest issue or ISO 1217, "Displacement Compressors Acceptance Tests," also of the latest issue.
- 2.4 Compressed Air and Gas Institute Handbook
- 2.5 Compressed Air and Gas Institute Recommended Fuel Consumption Test Procedure for Portable Air Compressors.

### 3. REQUIREMENTS:

#### 3.1 ENGINE:

- 3.1.1 Diesel or gasoline powered, as specified in the Invitation for Bids, electric starting
- 3.1.2 Electrical system, as specified in the Invitation for Bids

#### 3.2 CAPACITY: CFM and p.s.i.g., as specified in the Invitation for Bids

#### 3.3 GAUGES:

- 3.3.1 To be located curbside and protected from vandalism
- 3.3.2 To include:

- 3.3.2.1 Ammeter
- 3.3.2.2 Engine Oil Pressure
- 3.3.2.3 Engine Water Temperature
- 3.3.2.4 Air Pressure
- 3.3.2.5 Start/Stop Control
- 3.3.2.6 Hourmeter
- 3.3.2.7 Fuel Level Gauge

3.4 AUTOMATIC SHUTDOWN: To protect the engine and compressor in case of oil pressure failure and high temperature.

3.5 TRAILER:

3.5.1 Capacity of undercarriage and suspension must exceed total weight of the unit, plus 500 pounds of tools, where applicable.

3.5.2 Tires shall be automotive type, first line tires; manufacturer's recommended size.

3.5.3 Tow Bar:

3.5.3.1 Shall be manufacturer's standard, unless otherwise specified in the Invitation for Bids

3.5.3.2 Towing eye shall be solid lunnette type

3.5.3.3 Two wheel trailers shall have support leg with shoe or wheel

3.5.3.4 Shall have a safety chain appropriate to the size and weight of the trailer

3.5.4 Tool boxes: Number and capacity, as specified in the Invitation for Bids.

3.5.5 Lights: Spotlights and turn signals with connector

3.5.6 Wiring: Shall be color coded for ease of repair

3.5.7 Fenders: Shall have fenders over tires

3.6 INSTRUCTIONS:

3.6.1 Operation, maintenance, and instruction plates or durable instruction decals shall be located in a conspicuous place near controls.

3.6.2 Supplier shall provide 1 copy of complete instructions for maintenance and operation and 1 copy of a complete replacement parts list, for each air compressor shipped.

3.7 SAFETY REQUIREMENTS: Must meet all applicable Federal, State, and Local OSHA Standards.

3.8 NOISE LEVEL: Shall not exceed 76 decibels (A Scale), measured in accordance with paragraph 2.1. As explained in Attachment A, a special bid evaluation formula will be used to determine the successful bidder. It includes an incentive for offering compressors that are even quieter than the maximum acceptable noise level. Bidders must state the noise level of the unit offered.

Continued on next page....

Otherwise, their bid will be considered non-responsive, and consequently will not be considered in the determination of the successful bidder.

- 3.9 ENERGY EFFICIENCY: The special bid evaluation formula described in paragraph 3.8 above also includes an incentive to bidders for offering compressors that are more energy efficient. Bidders must state the fuel consumption rate of the unit offered in gallons per hour, measured in accordance with 2.5. Otherwise, their bid will be considered non-responsive, and consequently will not be considered in the determination of the successful bidder.

4. SAMPLING, INSPECTION, AND TEST PROCEDURES:

- 4.1 SAMPLES: Unless otherwise specified in the Invitation for Bids, no bid samples will be required.
- 4.2 INSPECTION: Upon receipt, each unit shall be inspected for condition and specification compliance by a government representative prior to acceptance. If a unit has to be rejected for any reason, the selling dealer shall be required to pick up the unit at the point of delivery, accomplish necessary repairs, and return the unit to the original point of delivery. If desired, and if space is available, the repairs may be accomplished on government property; this will be at the discretion of the government.
- 4.3 TESTING:
- 4.3.1 Testing for noise level shall be in accordance with paragraph 2.1 above.
- 4.3.2 Verification for noise level and testing of other specification requirements may be performed at the discretion of the contracting activity as indicated in the Invitation for Bids. Such tests shall be performed on bid samples taken from contractor's shipments. In the event products tested fail to meet requirements of this specification, the cost of samples used in testing and the cost of the testing shall be borne by the supplier.
- 4.3.3 Bidders must certify with each bid that the model being offered has been tested in accordance with paragraph 2.1; and, a copy of the laboratory test report must be included with the certification provided. Requests for certification of noise level for the same model year shall not be required unless there has been a design change affecting noise level output.  
Testing for performance shall be in accordance with 2.3.

5. PREPARATION FOR DELIVERY:

- 5.1 In all matters of detail, including those not specifically covered by these specifications, the work shall be professionally and skillfully accomplished in accordance with the best trade customs and professional standards of work of like character and purpose, as generally recognized by trade standards.

5.2 Each unit shall be completely assembled, adjusted, serviced, clean, and ready for continuous heavy duty service. Servicing shall include, but is not limited to, complete lubrication and inclusion of enough anti-freeze in the liquid cooling system of each water cooled engine to protect to the minimum °F specified in the Invitation for Bids. Servicing, adjustment, assembly, etc., shall be to the satisfaction of the government.

6. NOTES:

6.1 Any deviation from this purchase description must be indicated in the Invitation for Bids.

6.2 AVAILABILITY OF DOCUMENTS:

6.2.1 U.S. Environmental Protection Agency Air Compressor Noise Test Procedure is available from U.S. Environmental Protection Agency, 401 M. Street, SW, Washington, DC 20460.

6.2.2 ASME PTC Power Test Code of latest issue is available from the American Society of Mechanical Engineers, Inc., 345 East 47th St., New York, NY 10017

6.2.3 ISO 1217, "Displacement Compressors Acceptance Tests," of latest issue is available from American National Standards Institute, c/o Foreign Sales, 1430 Broadway, New York, NY 10018.

6.2.4 Compressed Air and Gas Institute Handbook is available from Compressed Air and Gas Institute, 1230 Keith Building, Cleveland, Ohio 44115.

6.2.5 Compressed Air and Gas Institute Recommended Fuel Consumption Test Procedure for Portable Air Compressors, is available from either the Compressed Air and Gas Institute, 1230 Keith Building, Cleveland, Ohio 44115, or NIGP, 1735 Jefferson Davis Highway, Suite 101, Arlington, Virginia 22202.

6.3 OPTIONS: Where various options are available under this purchase description, the Invitation for Bids will specify the option required. Options may include:

- 6.3.1 Lift Handles
- 6.3.2 Hose reels
- 6.3.3 Hose
- 6.3.4 Special paint
- 6.3.5 License plate holder
- 6.3.6 Brakes

6.4 BID EVALUATION CRITERIA: As noted in 3.8 and 3.9 above a special bid evaluation formula will be used to determine the successful bidder. Attachment "A" to this purchase description contains this formula and explains how it will be used.

COPIES OF THIS PURCHASE DESCRIPTION ARE AVAILABLE FROM:

THE NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING, INC.  
1735 JEFFERSON DAVIS HIGHWAY  
CRYSTAL SQ. 3  
SUITE 101  
ARLINGTON, VIRGINIA 22202

Attachment "A" to:  
NIGP Purchase Description  
FSC Portable Air Compressors  
June 26, 1981

"BUY QUIET"/ENERGY EFFICIENT BID EVALUATION FORMULA

Purpose

The purpose of this formula is to permit the (city, county, etc.) to purchase a significantly quieter, more energy-efficient portable air compressor through the competitive bidding process. In effect, it allows the bidder to offer a competitive bid on a unit which may be slightly more expensive to acquire, but which will make less noise and use less fuel.

Method

The formula will be used to calculate an "evaluated" bid price for each bidder's offer; and, evaluated bid prices, rather than "actual" bid prices, will be compared in the determination of the lowest and best bidder. As stated in paragraph 3.8 and paragraph 3.9, each bidder must provide the noise level and fuel consumption rate of the unit offered with his actual bid price.

Formula and Criteria

The formula for determining "evaluated bid price" is:

$$EBP = P - VNR + CE$$

Where:

EBP = Evaluated Bid Price

P = Actual Bid Price

VNR = Value of (Additional) Noise Reduction (When Compared to Noisest Model Offered "Responsively": that is, "meeting the noise level and other requirements of the Invitation for Bids").

CE = Cost of Energy (i.e., gasoline or diesel fuel) to operate the unit during its projected life.

The formula for calculating VNR is:

$$VNR = Y (PAV) (N_N - N)$$

Where:

Y = The percentage factor by which the purchasing activity will "reward" (or "compensate") the bidder for each decibel that his compressor is quieter than the noisiest model offered responsively. For purposes of this procurement Y shall be \_\_\_\_\_%. (expressed as \_\_\_\_\_).

PAV = The Average of the Actual Bid Prices for all models offered responsively. In cases where a bidder offers one or more alternates, the model with the lowest noise level and meeting the requirements of the Invitation for Bids shall constitute his sole offer.

$N_N$  = The Noise Level in decibels (A Scale) of the Noisiest Compressor offered responsively.

N = The Noise Level in decibels (A Scale) of the model offered by the bidder whose EBP is being determined.

The formula for determining CE is:

$$CE = FC \times AOH \times PLY \times CEG$$

Where:

FC = The fuel consumption rate of the unit offered, expressed in "gallons per hour"

AOH = The projected annual operating hours for the unit

PLY = The projected life of the unit, expressed in years

CEG = The cost of energy (i.e., diesel or gasoline fuel), expressed in dollars per gallon.

In this purchase:

AOH = \_\_\_\_\_ (to be provided by government)

PLY = \_\_\_\_\_ (to be provided by government)

CEG = \_\_\_\_\_ (to be provided by government)

Sample of Responsive Bid Tabulation  
and Calculation of Evaluated Bid Price  
 City of Jonesville  
 I. F. B. No. 3

June 26, 1981

<u>Bidder</u>	<u>P</u>	<u>dBA</u>	<u>FC</u>	<u>EBP</u>
A	\$9,521	75	2.6	\$17,971.00
B	\$9,485	74	3.1	\$19,372.10
C	\$9,259	73	2.8	\$18,253.20
D	\$9,315	72	2.3	\$16,226.30

How EBP was determined for each model:

Given that:  $N_N = 75$  dBA (see Bidder A)

$Y = 2\%$  (Expressed as .02)

PAV = \$9,395 (Add \$9,521; \$9,485; \$9,259; and \$9,315.  
 Divide total, which is \$36,180 by 4)

AOH = 520 (hours)

PLY = 5 (years)

CEG = \$1.25

Step One: Calculate VNR

For Bidder A:  $VNR = .02 (\$9,395) (75-75)$   
 $= .02 (\$9,395) (0)$   
 $= \underline{\$0}$

For Bidder B:  $VNR = .02 (\$9,395) (75-74)$   
 $= .02 (\$9,395) (1)$   
 $= \underline{\$187.90}$

For Bidder C:  $VNR = .02 (\$9,395) (75-73)$   
 $= .02 (\$9,395) (2)$   
 $= \underline{\$375.80}$

For Bidder D:  $VNR = .02 (\$9,395) (75-72)$   
 $= .02 (\$9,395) (3)$   
 $= \underline{\$563.70}$

Step Two: Calculate CE

For Bidder A:  $CE = 2.6 \times 520 \times 5 \times \$1.25$   
 $= \underline{\$8,450}$

For Bidder B:  $CE = 3.1 \times 520 \times 5 \times \$1.25$   
 $= \underline{\$10,075}$

For Bidder C:  $CE = 2.8 \times 520 \times 5 \times \$1.25$   
 $= \underline{\$9,100}$

For Bidder D:  $CE = 2.3 \times 520 \times 5 \times \$1.25$   
 $= \underline{\$7,475}$

Step Three: Calculate EBP

For Bidder A:  $EBP = \$9,521 - \$0 + \$8,450$   
 $= \underline{\$17,971.00}$

For Bidder B:  $EBP = \$9,485 - \$187.90 + \$10,075$   
 $= \underline{\$19,372.10}$

For Bidder C:  $EBP = \$9,259 - \$375.80 + \$9,100$   
 $= \underline{\$18,253.20}$

For Bidder D:  $EBP = \$9,315 - \$563.70 + \$7,475$   
 $= \underline{\$16,226.30}$

Step Four: Award Contract:

The contract would be awarded to Bidder D based on his EBP of \$16,226.30. Purchasing government would pay a contract price of \$9,315.00.

Appendix A

Compressed Air and Gas Institute Recommended Fuel Consumption Test Procedure  
For Portable Air Compressors

Provided below is the recommended fuel consumption test procedure developed by the Compressed Air and Gas Institute (CAGI) for portable air compressors. CAGI is the trade association for the pneumatic equipment industry.

Questions regarding the scope method, or conditions in this procedure should be directed to Frank W. Akstens, c/o CAGI, 1230 Keith Building, Cleveland, Ohio 44115. Questions regarding the use of this procedure to obtain information for bid evaluation purposes should be directed to Stephen B. Gordon, Director, Buy Quiet Program, NIGP, 1735 Jefferson Davis Highway, Suite 101, Arlington, VA 22202.

COMPRESSED AIR AND GAS INSTITUTE  
RECOMMENDED FUEL CONSUMPTION TEST PROCEDURE

As Submitted To

THE NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING, INC.

SCOPE

This procedure is designed to evaluate the specific fuel consumption of a portable air compressor at a full load condition.

METHOD

After reaching a stabilized operating condition, capacity and fuel consumption tests should be made to develop the following value:

$$\frac{\text{gallons/hour}}{100 \text{ ft}^3/\text{min.}} = \frac{\frac{\text{lbs. fuel}}{\text{fuel density}}}{\text{Ft}^3 \text{ air delivery}} \times \frac{60 \text{ min}}{\text{hr.}} \times 100$$

The following values should be used for fuel density:      7.00 lbs/gal - diesel  
6.15 lbs/gal - gasoline

CONDITIONS

1. Tests for air flow measurement shall be run in accordance with PTC-9/ISO 1217.
2. Tests shall be made at an altitude not exceeding 1000 ft. (300 meters) above sea level.
3. Ambient temperature during testing should be within the range of 60° - 90°F. (15° - 32° C.). If tests are run outside of this range, the manufacturer shall supply correction factors used to adjust results to the specified range.
4. Fuel measurement must relate to mass flow, and the fuel must be at ambient temperature at the beginning of the test. No artificial means can be employed to reduce fuel temperature after the test begins.

5. Each fuel measurement test must last a minimum of 5 minutes; an average of three or more test readings should be used.
6. Air flow during each fuel test period should be measured and the average used in the formula.
7. The manufacturer shall (if requested) supply a complete test procedure and demonstrate that test accuracy is within  $\pm 3\%$ .
8. Specified pressure shall be measured at the terminal outlet of the package.

Example: A 175 cfm diesel powered compressor is tested with the following results:

Capacity: 178 cfm (average).  
Fuel Used: 2.85 lbs. in 8 minutes (average).

Substituting into formula:

$$\frac{\text{gals/hr}}{100 \text{ cfm}} = \frac{2.85}{7.00} \times \frac{60 \times 100}{8 \times 178} = 1.72$$

$$\text{Fuel consumption @ 175 cfm} = 1.72 \times \frac{175}{100} = 3.01 \text{ g.p.h.}$$

APPENDIX B

LIST OF MANUFACTURERS

Listed below are several manufacturers of portable air compressors. Be sure to include these manufacturers and NIGP on your bidders mailing list. The manufacturers probably will not bid on a "direct" basis, but they do need (and want) to know about your requirements for quieter more energy-efficient portable air compressors. The NIGP copy should be sent to the Director, Buy Quiet Program, NIGP, 1735 Jefferson Davis Highway, Suite 101, Arlington, Virginia 22202.

American Jenbach Corporation  
530 Chapel Hill Road  
Burlington, NC 27215

Grimmer-Schmidt Corporation  
Hurricane Road  
P.O. Box 342  
Franklin, IN 46131

Atlas Copco, Inc.  
70 Demarest Drive  
Wayne, NJ 07470

Ingersoll-Rand Company  
P.O. Box 868  
Mocksville, NC 27028

Colt Industries Operating Corp.  
Quincy Compressor Division  
217 Maine Street  
Quincy, Illinois 62301

Joy Manufacturing Company  
900 Woodland Avenue  
Michigan City, IN 46360

Davey Compressor Company  
11060 Kenwood Road  
Cincinnati, OH 45242

Le Roi Dresser  
N. Main Ave. & Russell Rd.  
Sidney, OH 45365

G.S. Industries, Inc.  
60 Kansas Avenue  
P.O. Box 5185  
Kansas City, MO 66105

P. K. Lindsay Company, Inc.  
Deerfield, NH 03037

Gardner-Denver Company  
Gardner Expressway  
Quincy, Illinois 62301

Schramm, Inc.  
800 East Virginia Ave.  
West Chester, PA 19380

Gordon Smith & Company, Inc.  
P.O. Box 1240  
Bowling Green, Kentucky 42101

Sullair Corporation  
3700 East Michigan Boulevard  
Michigan City, IN 46360

APPENDIX C

GOVERNMENTS KNOWN TO HAVE HAD BUY QUIET EXPERIENCE WITH PORTABLE AIR COMPRESSORS

The Buy Quiet concept is new and the program is just starting. Therefore, it is not surprising that only a few governments are known to have had such experiences. As more governments find the concept worthy and practical, this list can be expected to grow.

Governments known to have had Buy Quiet experience as of this writing include:

	<u>Contact/Phone Number</u>
. City of St. Paul, Minnesota	Bill Peter (612) 298-4115
. Virginia Department of Highways and Transportation	Aubrey Baird/(804) 786-2721
. City of Salt Lake City, Utah	Terry Anderson/(801) 535-7661

APPENDIX D

Information on any aspect of the Buy Quiet Program is available from:

Director, Buy Quiet Program  
National Institute of Governmental Purchasing  
Inc.  
1735 Jefferson Davis Highway  
Suite 101  
Arlington, Virginia 22202  
  
Telephone (703) 920-4020

For additional information on technical and programmatic matters relating to product noise you, may wish to contact your local or state noise control office.