

KOKEN LTD.

7, YONBANCHO, CHIYODA-KU, TOKYO, 102-8459 JAPAN



PHONE: TOKYO 03(5276)1911(KEY)
TELEFAX: TOKYO 03(3265)1976

March 31, 2003

Robert A. Taft Laboratory
M/S C34, 4676 Columbia Parkway
Cincinnati, Ohio 45225
(Fax: +1-513-533-8285)

Attention: NIOSH Docket Officer

Subject: NIOSH/NPPTL Public Meeting on April 10, 2003

Dear Sirs,

You are requested to allow us to make presentation at the NIOSH/NPPTL Public Meeting held at at Marriott Key Bridge Hotel on April 10, 2003.

The details are attached herewith accompanied with a brief summary of our presentation.

The original is being airmailed to you.

Thank you.

Sincerely yours,


Tomoyuki Kawakami
Deputy Manager, Int'l
(FAX: +81-3-3265-1976)

TK/t

Attachment Details

4/13/03
Rec'd
KED

KOKEN LTD.

DETAILS

Name: KOKEN LTD.

Address: 7, Yonbancho, Chiyoda-ku, Tokyo, Japan

Fax Number: +81-3-3265-1976

Telephone Number: +81-3-5276-1911

Business Affiliation of Compa: Respirator Manufacturer

Name of Presenter: M. Shinomiya

Brief Summary of Presentation: As described in the attached sheet

Approximate Time for Presentation: 10 minutes

KOKEN LTD.

Proposal of Incorporation of a New PAPR in New NIOSH Standards

KOKEN LTD

Our proposal is concerned with a new PAPR which supplies the wearer with air following his or her breathing and always maintains a positive pressure inside the facepiece.

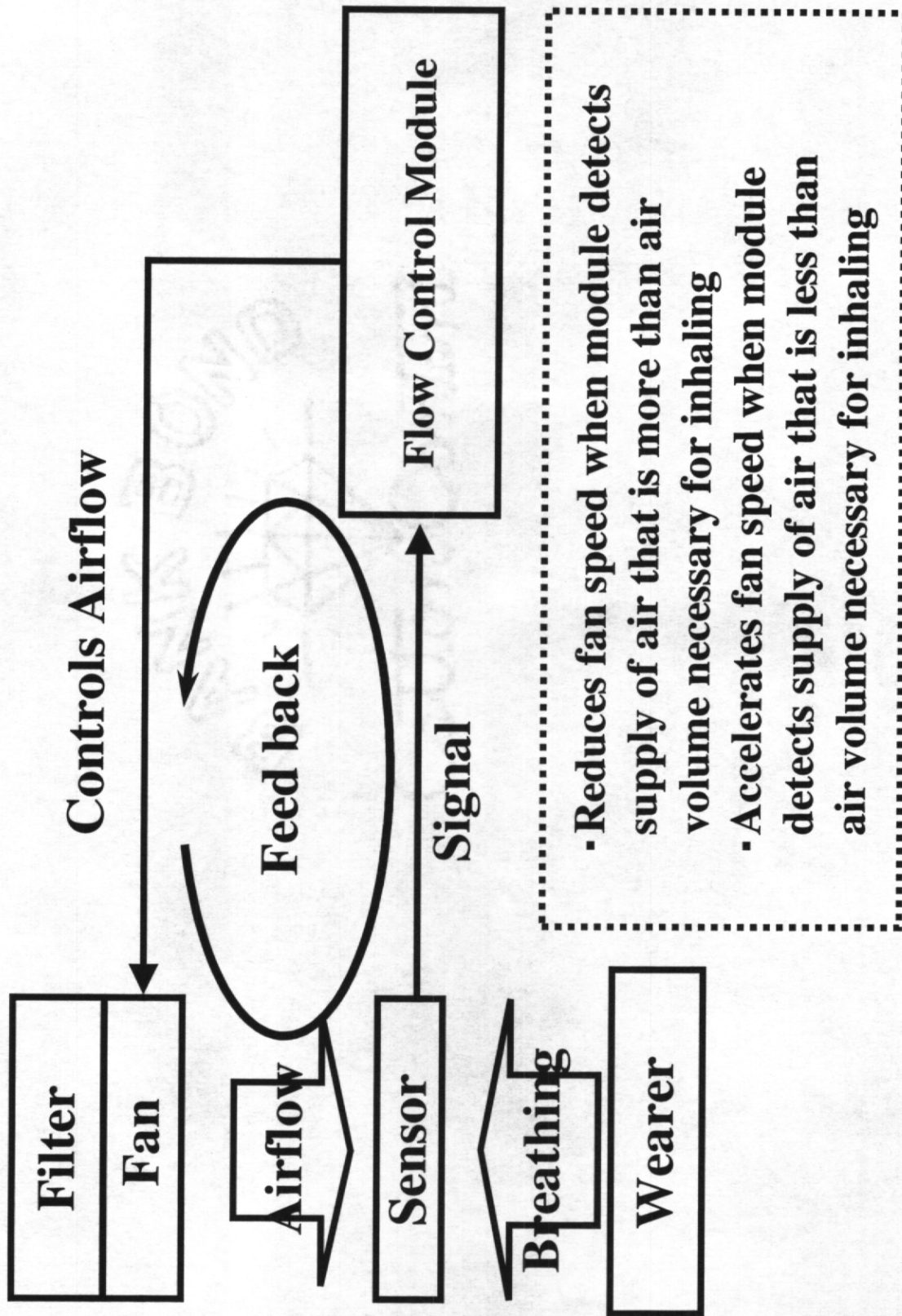
PAPRs are good respiratory protective devices that provide a high respiratory protection and a low inhalation resistance. However, present 42 CFR Part 84, Subpart KK requires PAPRs to supply the wearer with a continuous a high airflow, i.e. not less than 115 lpm for tight-fitting facepiece and 170 lpm for loose-fitting hood or helmet, that can insure protection even on heavy workload. Therefore, such a PAPR which always provides a continuous high airflow have weak points of causing an increase of exhalation resistance and a quickly clogging of filter. If those weak points are eliminated from PAPRs, it should further enhances practical use of PAPRs and users' merit.

By taking account of this, our company recently developed a new tight-fitting facepiece PAPR equipped a blower which controls revolution of the fan following the wearer's breathing. This PAPR, adjusting to the wearer's breathing in practical range, provides airflow necessary to insure a positive pressure inside the facepiece, thereby, eliminates the necessity of continuous high airflow. It reduces the wearer's workload and also gives the respirator users a cost merit.

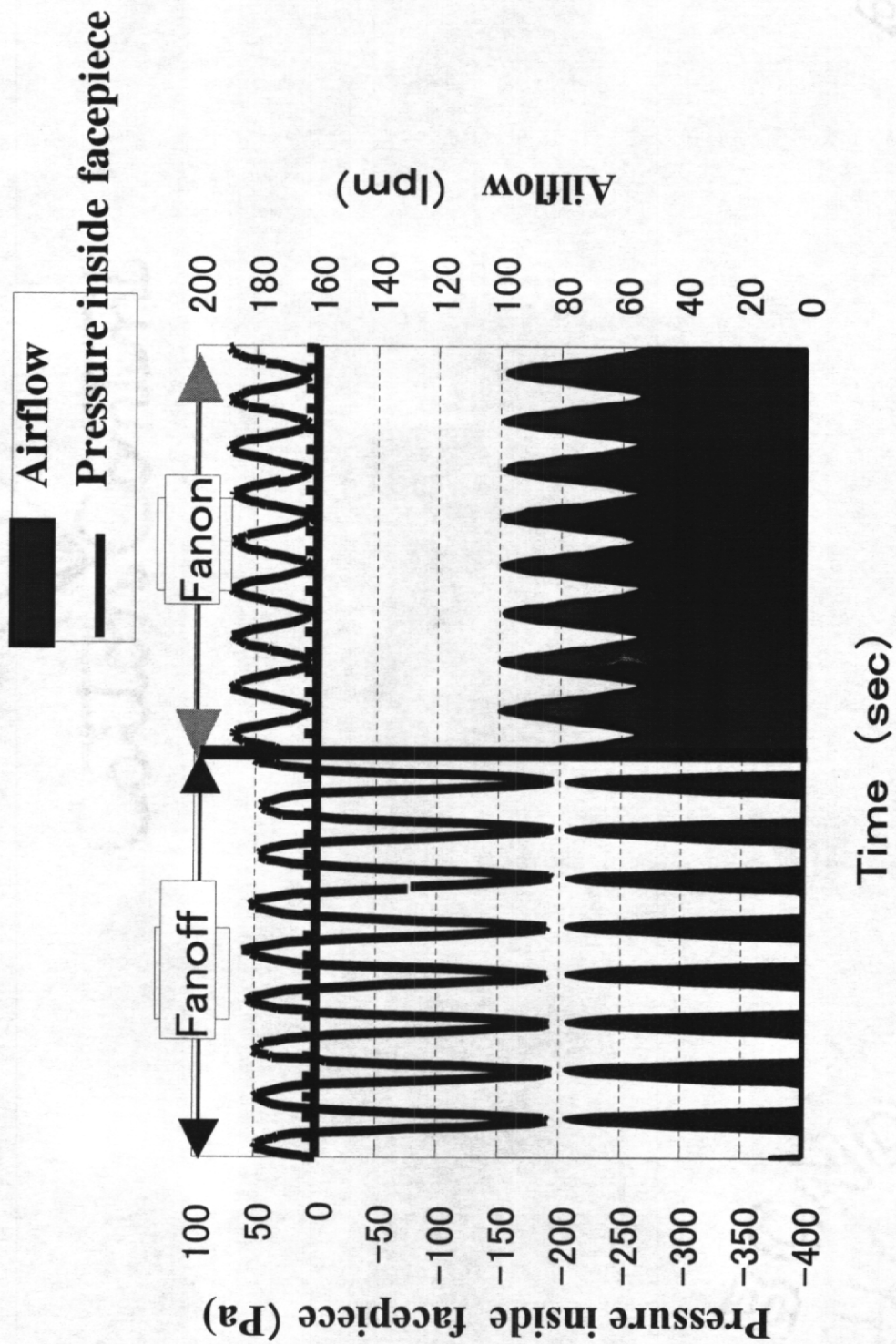
Essential purpose of PAPRs' air supply would be to insure a positive pressure inside the facepieces or hoods or helmets on the wearers' inhaling. Providing a continuous high airflow even on the wearer' exhaling merely quickens consumption of filter. A PAPR which provides airflow necessary to insure a positive pressure inside the facepiece on the wearer's inhaling and restrains airflow on the wearer's exhaling is already available. It would be no longer reasonable to specify PAPRS' airflow only by a continuous high airflow. It would be reasonable to replace present continuous high airflow test by a pulsated airflow test that is determined by taking account of human breathing. As a study material of New NIOSH Standards of PAPRs, we therefore suggest NIOSH to incorporate in New Standards such a PAPR which provides airflow following the wearer's breathing.

In our test, this new PAPR always maintains a positive inside pressure at an airflow that is approximately 2 to 3 times the actual breathing airflow, and this airflow is 30 - 70% the airflow provided by present PAPR

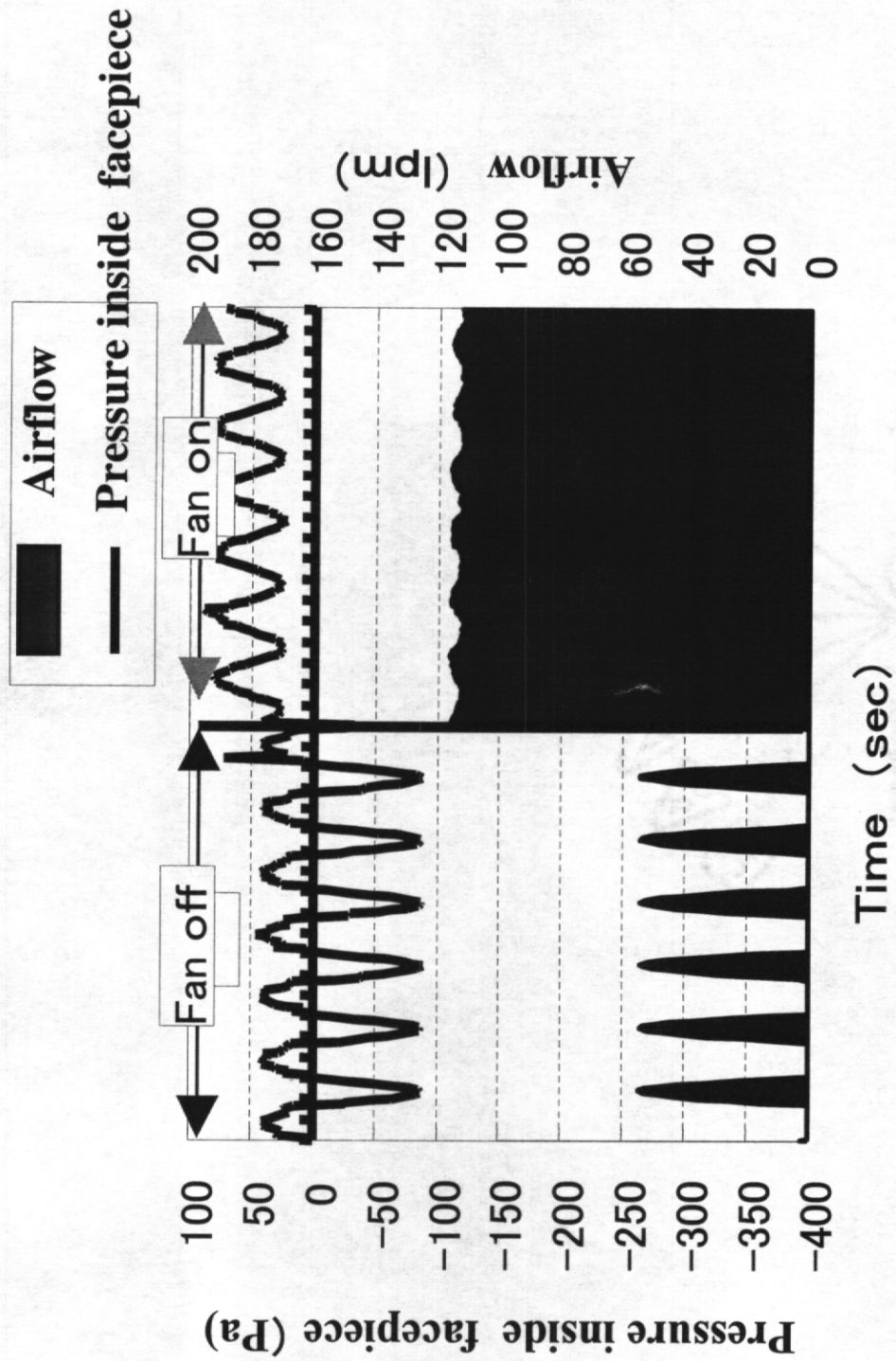
Schematic Diagram of a New PAPR



Airflow of a New PAPR, an Example

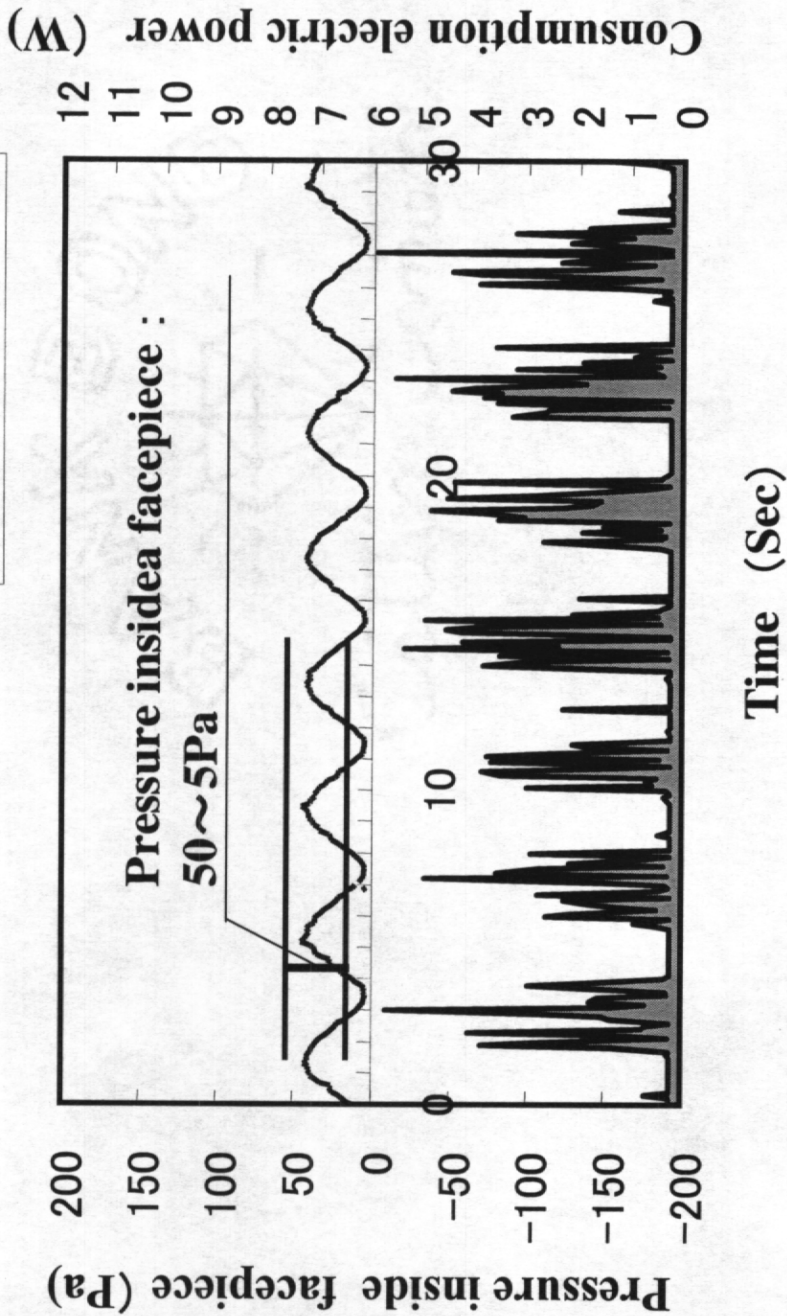


Airflow of a Traditional PAPR, an Example



Power Consumption & Pressure inside Facepiece of a New PAPR an Example

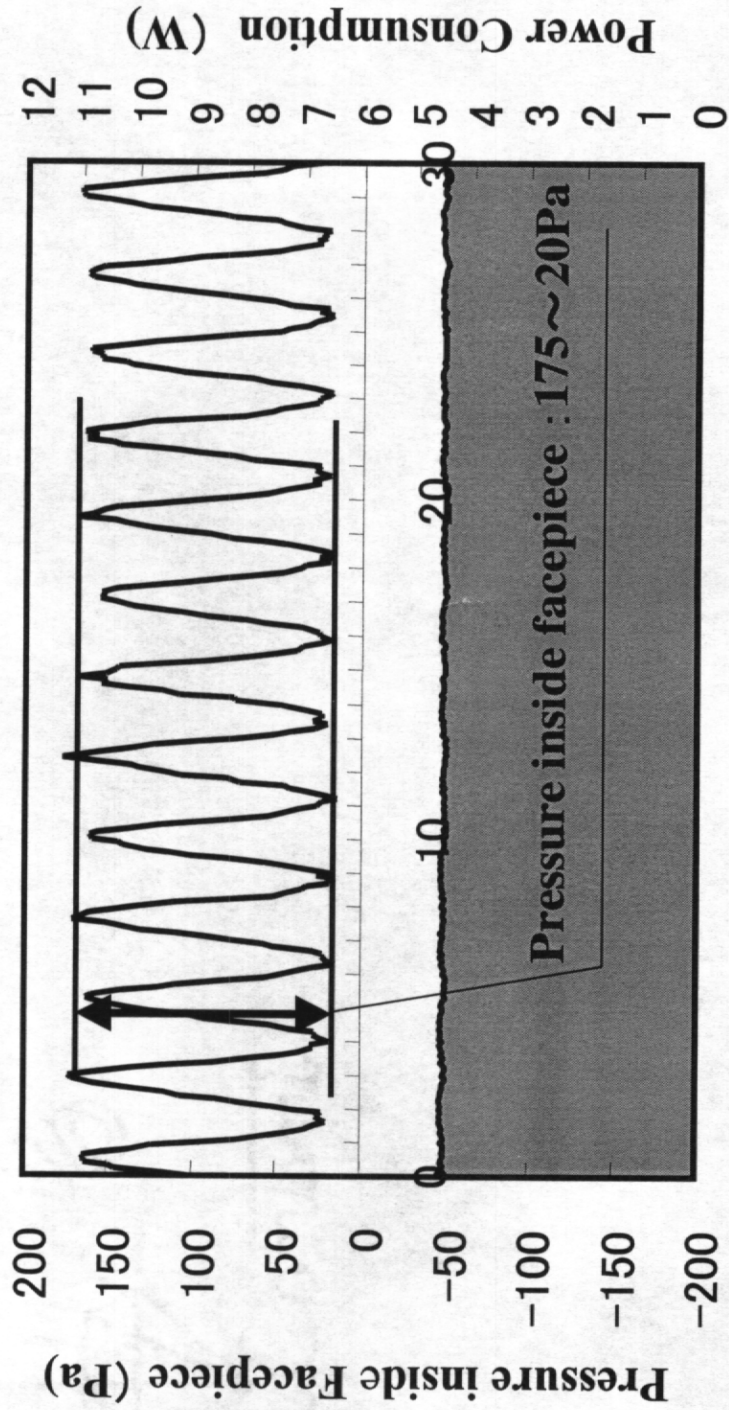
■ Instantaneous Power consumption
— Pressure inside the facepiece



Power Consumption & Pressure inside Facepiece of a Traditional PAPR an Example

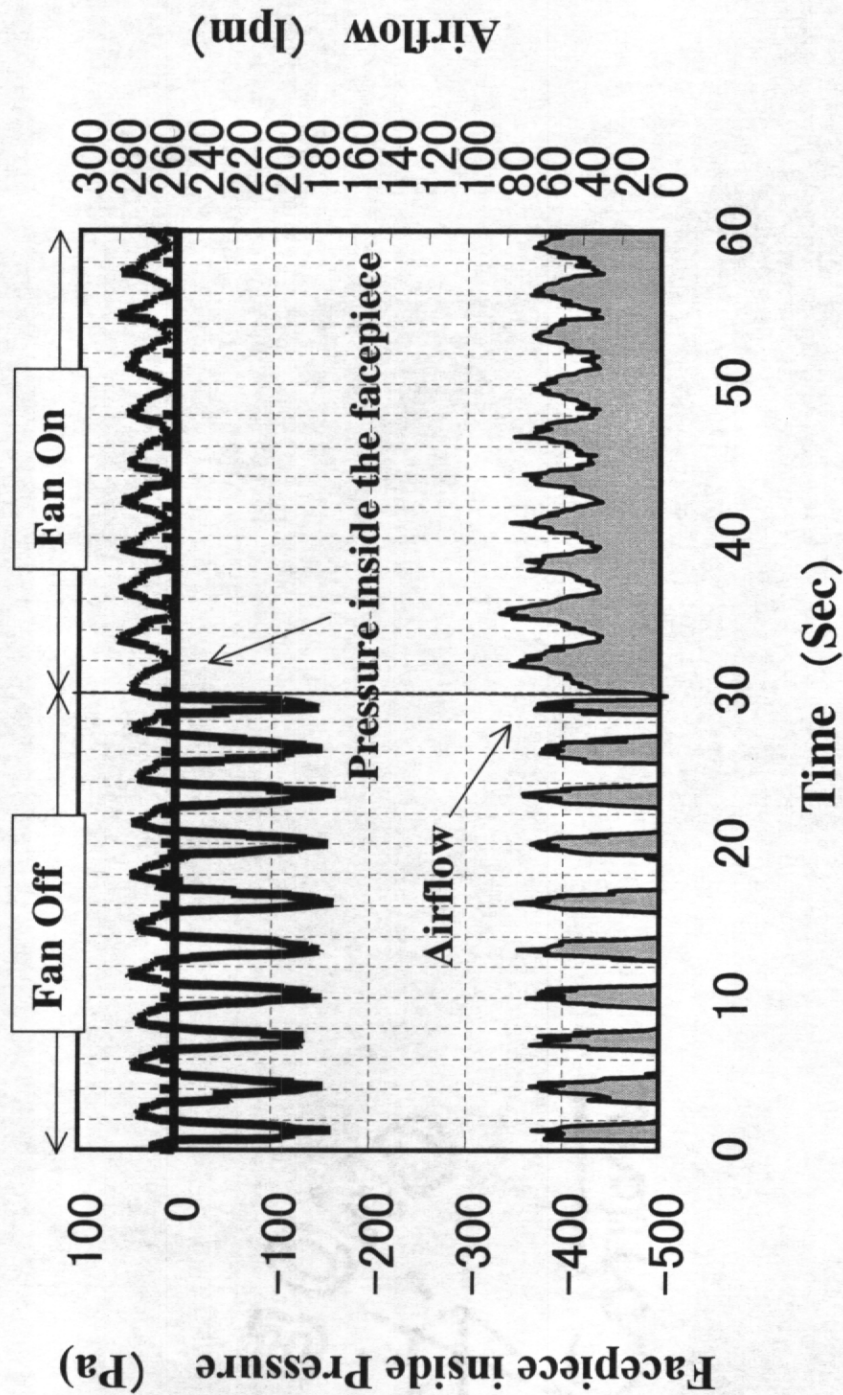
KOKEN LTD.

Instantaneous Power Consumption
Pressure inside facepiece



Time (sec)

Test Results of a New PAPR in Man Test, an Example (ManTest by walking on treadmill at 4.8km/h of speed)



Proposal of Incorporation of a New PAPR in New NIOSH Standards

KOKEN LTD

Our proposal is concerned with a new PAPR which supplies the wearer with air following his or her breathing and always maintains a positive pressure inside the facepiece.

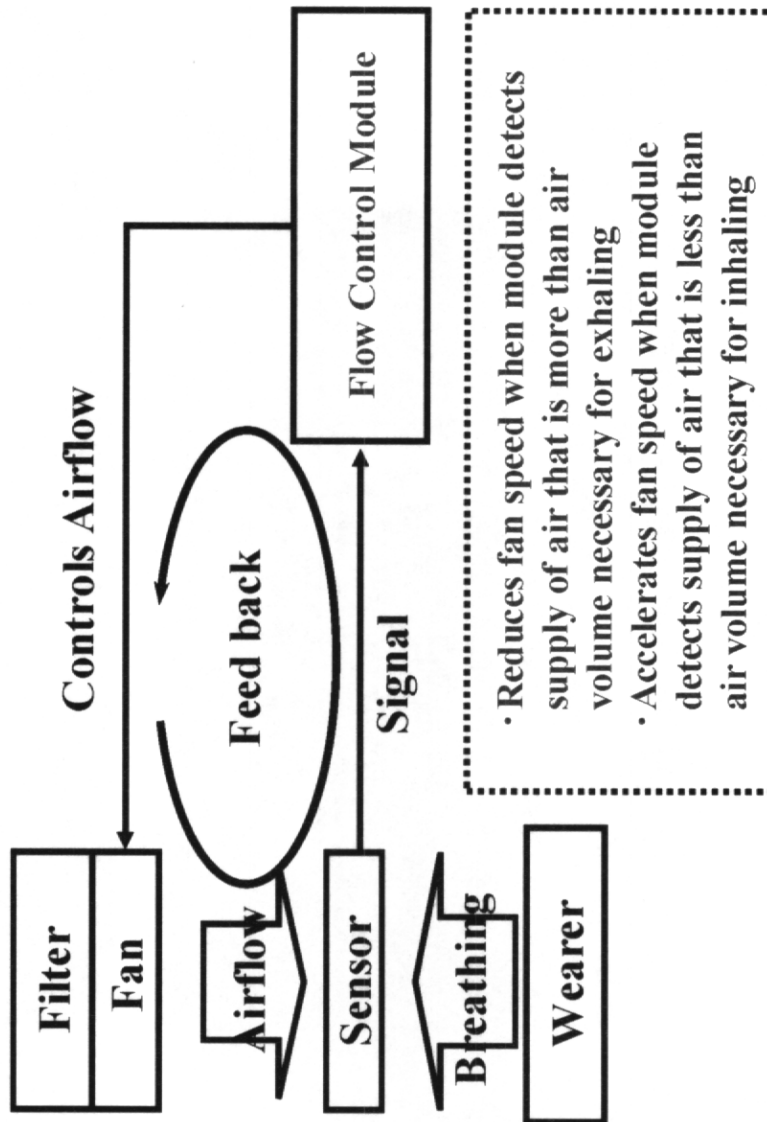
PAPRs are good respiratory protective devices that provide a high respiratory protection and a low inhalation resistance. However, present 42 CFR Part 84, Subpart KK requires PAPRs to supply the wearer with a continuous, high airflow, i.e. not less than 115 lpm for tight-fitting facepiece and 170 lpm for loose-fitting hood or helmet, that can insure protection even on heavy workload. Such a PAPR which always provides a continuous, high airflow have weak points of causing an increase of exhalation resistance and a quickly clogging of filter. If those weak points are eliminated from PAPRs, it should further enhances practical use of PAPRs and users' merit.

By taking account of this, our company recently developed a new type of tight-fitting facepiece PAPR equipped a blower which controls revolution of the fan following the wearer's breathing. This PAPR, adjusting to the wearer's breathing in practical range, provides airflow necessary to insure a positive pressure inside the facepiece, thereby, eliminates the necessity of continuous high airflow. It reduces the wearer's physiological burden and also gives the respirator users a cost merit.

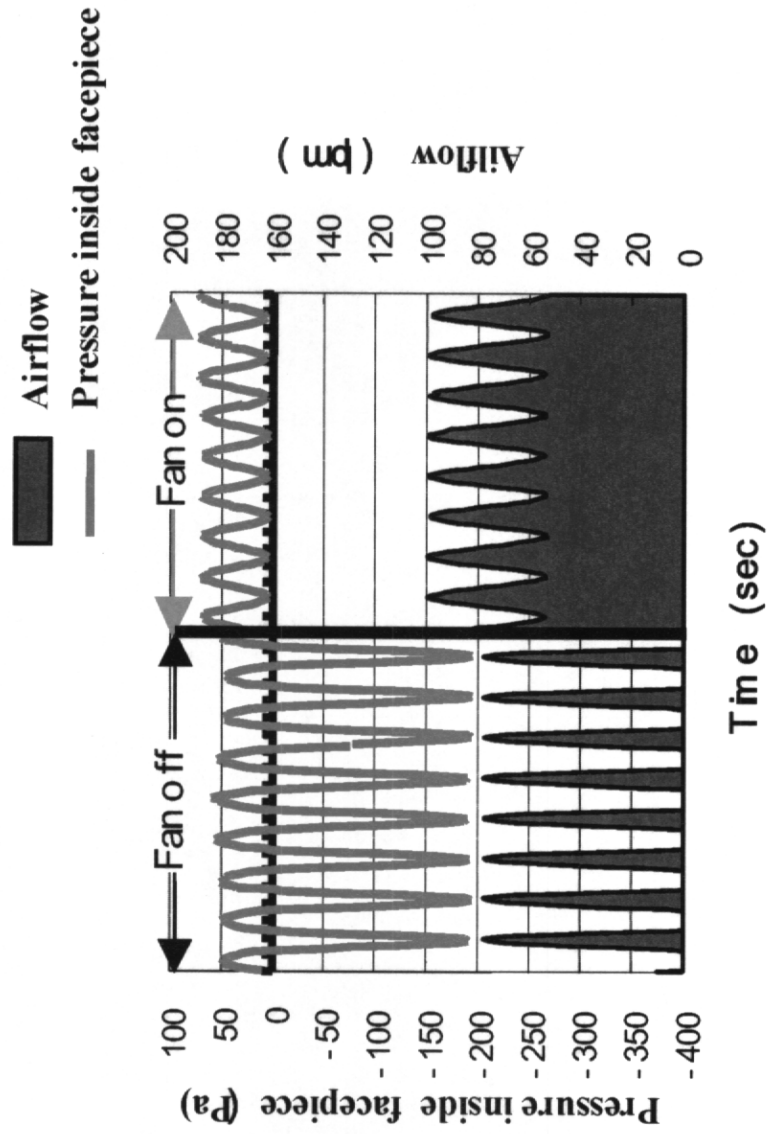
Essential purpose of PAPRs' air supply would be to insure a positive pressure inside the facepieces or hoods or helmets on the wearers' inhaling. Providing a continuous high airflow even on the wearer' exhaling merely quickens consumption of filter. A PAPR which provides airflow necessary to insure a positive pressure inside the facepiece on the wearer's inhaling and restrains airflow on the wearer's exhaling is already available. It would be no longer reasonable to specify PAPRS' airflow only by a continuous high airflow. It would be reasonable to replace present continuous high airflow test by a pulsated airflow test that is determined by taking account of human breathing. As a study material of the New NIOSH Standards of PAPRs, we therefore suggest NIOSH to incorporate in New Standards such a PAPR which provides airflow following the wearer's breathing.

In our test, this new type of PAPR always maintains a positive inside pressure at an airflow that is approximately 2 to 3 times the actual breathing airflow, and this airflow is 30 - 70% the airflow provided by present PAPR. Figure 1 shows a simple schematic diagram of this new type of PAPR and Figure 1 through 6 show examples of data obtained in a test of this new type of PAPR.

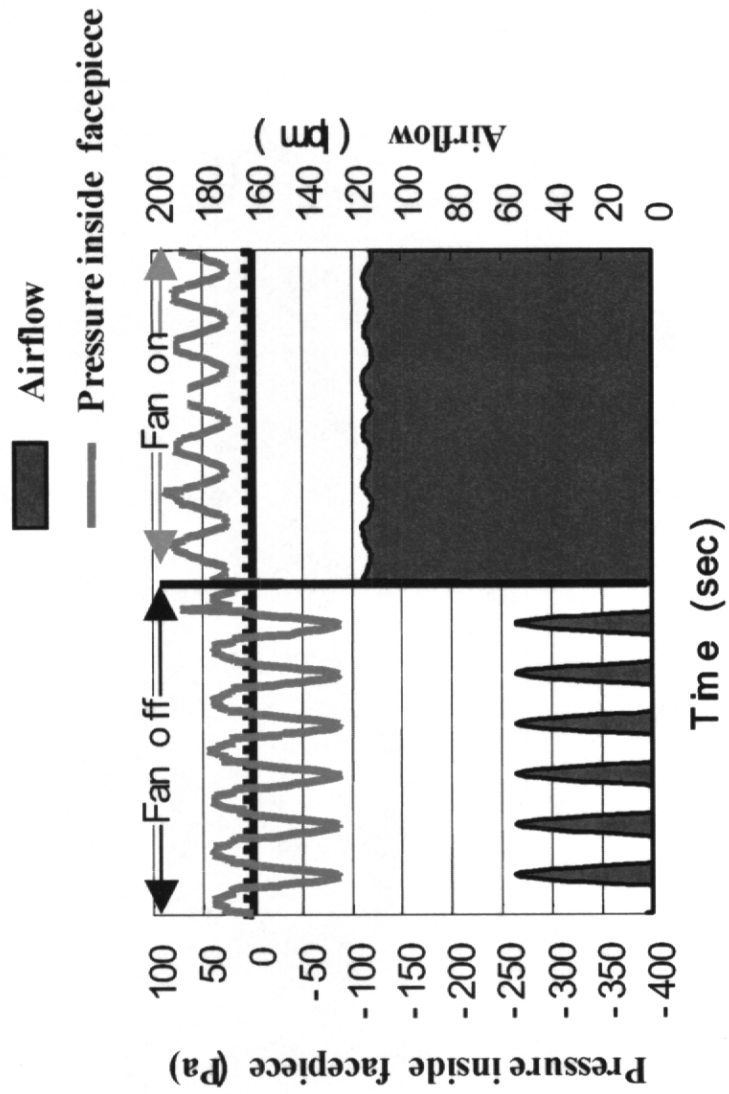
Schematic Diagram of a New PAPR



Airflow of a New PAPR, an Example

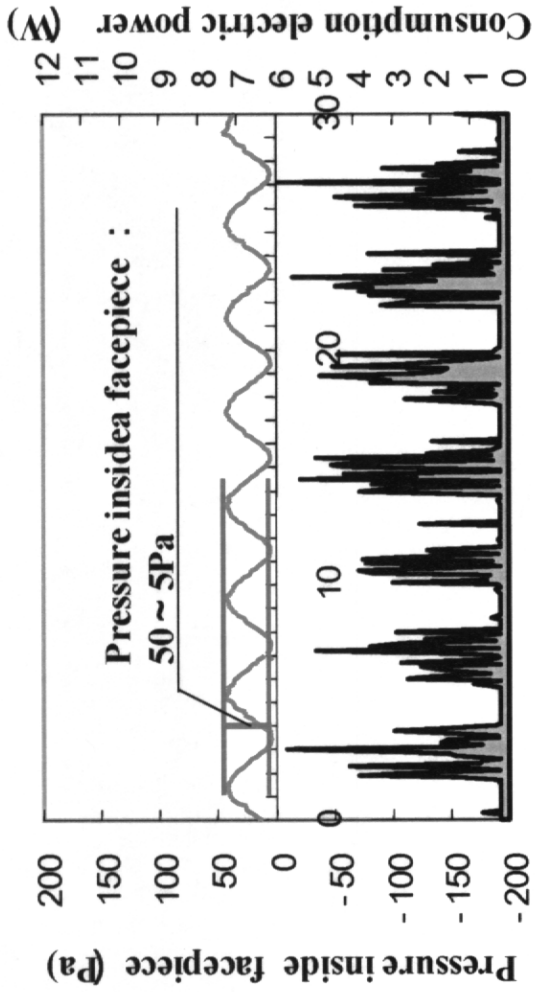


Airflow of a Traditional PAPR, an Example



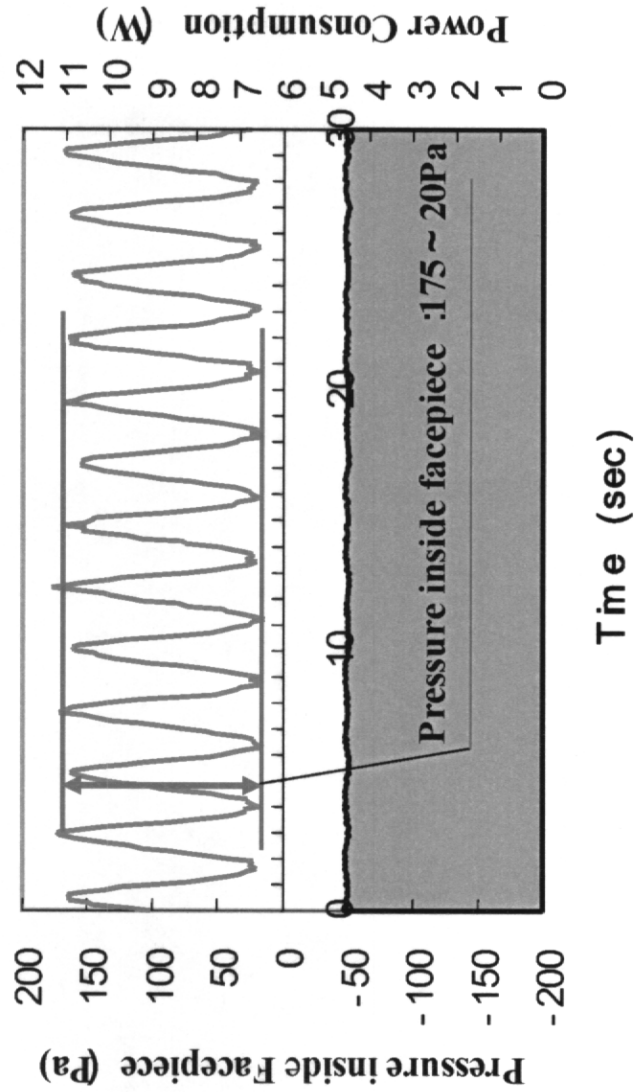
Power Consumption & Pressure inside Facepiece of a New PAPR an Example

Instantaneous Power Consumption
 Pressure inside the facepiece



Power Consumption & Pressure inside Facepiece of a Traditional PAPR an Example

Instantaneous Power Consumption
Pressure inside facepiece



**Test Results of a New PAPR in Man Test, an Example
(ManTest by walking on treadmill at 4.8km/h of speed)**

