

INNOVATION BY *INDIAN NAVY* TOWARDS COVID-19

1. Certain in-house initiative/ innovation pursued by the Indian Navy, with an aim to contribute to the ongoing efforts toward COVID-19, which could be useful for the IONS nations is being shared for information.

Portable Multi-feed Oxygen Manifold/Splitter

2. **Item/Purpose.** Portable Multi-feed Oxygen distribution system, using a 6 way Radial Header with fine adjustment reducer and adapters, to provide oxygen from a pair of oxygen cylinders to 12 patients through Ventimask in case of an emergency.



3. **Impact.**

(a) Caters for large number of patients, who may require oxygen support. Typical oxygen facility at hospitals only caters to a single patient.

(b) Low cost arrangement for providing oxygen supply in makeshift/field hospitals, where standing arrangements may not be provisioned.

4. **Details.**

(a) **Introduction.** A typical Oxygen providing facility in hospitals comprises an Oxygen cylinder feeding only one

patient through a Ventimask arrangement. However, in times like these where arrangements are required to cater for large number of patients who need oxygen support for a short duration (only 5–8% of the personnel may need ventilators), a need was felt to design a suitable portable arrangement that could provide Oxygen through masks to a number of distressed personnel from a single source during emergency.

(b) **Innovative Portable Multi-feed Oxygen Manifold (MOM).**

To cater for this requirement, an innovative Portable Multi-feed Oxygen Manifold using 6-way Radial Header has been designed by personnel of Indian Naval Dockyard. The entire set up was made operational by manufacturing a Fine Adjustment Reducer and specific adapters of requisite dimensions for connecting the Oxygen cylinder and the portable MOM. An industrial 6-way Radial Header was immediately modified by Indian Naval Dockyard to enable one jumbo size Oxygen Bottle to supply Oxygen to patients concurrently.



Multi-feed Oxygen Manifold

3. **Trials in Indian Naval Dockyard and Hospital.** The preliminary trials of the entire assembly were initially conducted at Indian Naval Dockyard. This was followed by rapid trials at the Indian Naval Hospital, wherein the portable MOM was successfully set up within 30 minutes. Indian Navy has commenced manufacturing such portable MOM to cater for large number of patients in make shift locations.



Trials at Casualty Ward of Indian Naval Hospital

4. The Multi-feed Oxygen Manifold as described above can be manufactured at any Ship Maintenance Facility or Repair Yard. If required by any IONS nation, drawing could be provided by Indian Navy. Indian Navy could be contacted via email acnsfci@navy.gov.in or through promulgated IONS POC.