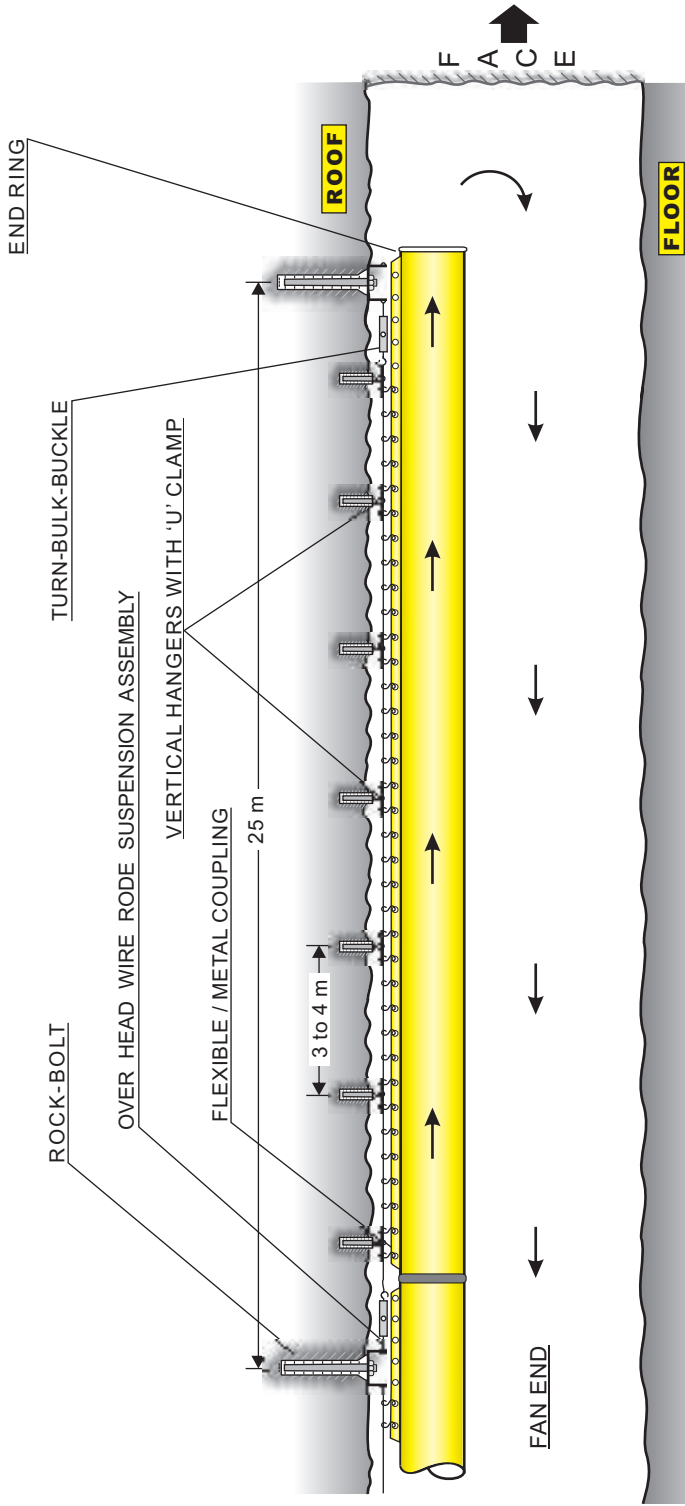
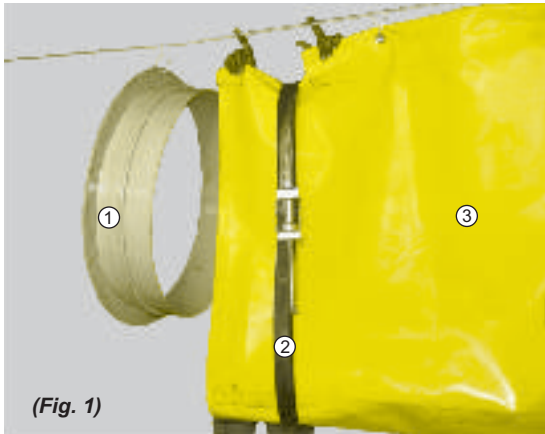


Instruction Manual
for Installation,
Care & Maintenance
of Flexible Tubings

Installation of Flexible Tubing



Joint With Flexible Couplings



1. Fan Adapter 2. Flexible Coupling 3. Duct

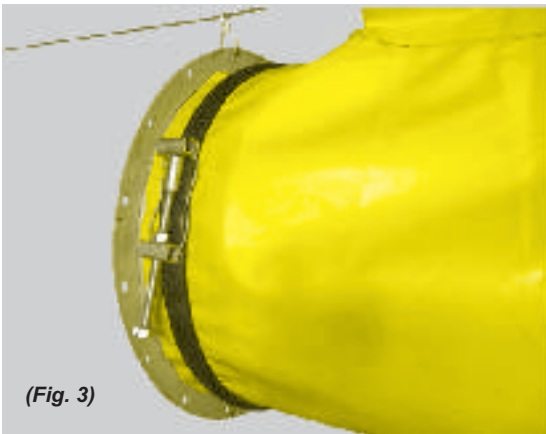
- Install Overhead Wire-Rope suspension between fan and portal for suspending Flexible Duct. **Preferably, Use Semi Rigid Flexible Tubings.**
- Fix M.S. Adapter with a flange facing the fan and one 10 mm dia M.S. ROD (as shown) welded on its outside surface.
- Suspend Flexible Duct along with couplings from the overhead suspension assembly.



(Fig. 2)

1. M.S. Adapter 2. M.S. Ring

- Push Flexible Tubing over the M.S. Adapter with an overlap of 150 mm.



(Fig. 3)

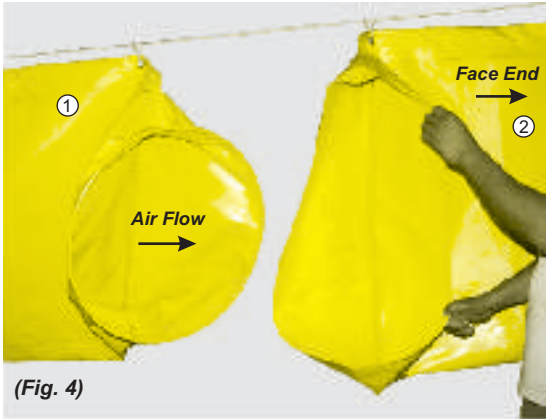
- Slide Flexible Coupling over the cloth covering the M.S. Ring of the M.S. Adapter.
- Tighten the tension-bolt of the coupling.



Note :- The end ring should always be towards the face side of the tunnel.



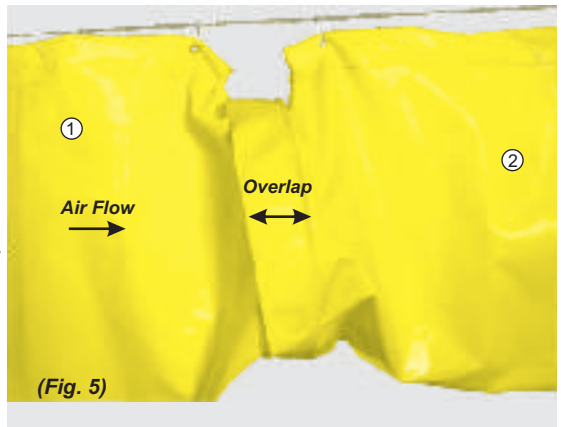
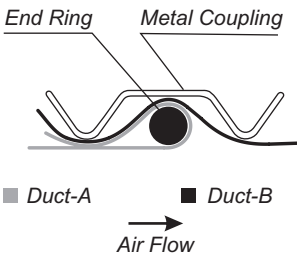
Joint With Metal Coupling



(Fig. 4)

1. Duct-A 2. Duct-B

- Suspend Duct-B for extension (with End-Ring facing towards face.)
- Bring the end of Duct-B close to the End-Ring of Duct-A, keeping the suspension strip in line with each other.

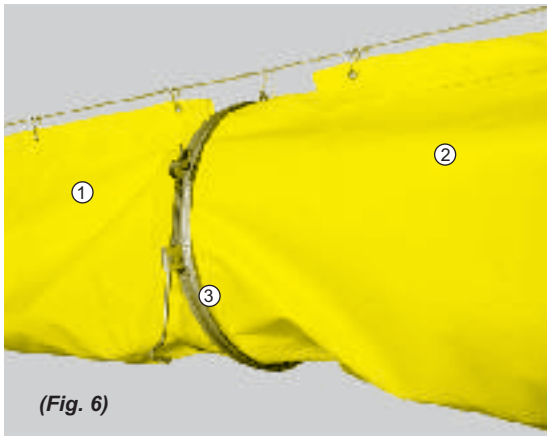


(Fig. 5)

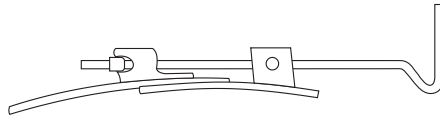
1. Duct-A 2. Duct-B

- Push Duct-B over the End-Ring of Duct-A with an overlap of 150-200 mm.





1. Duct-A 2. Duct-B 3. Metal Coupling



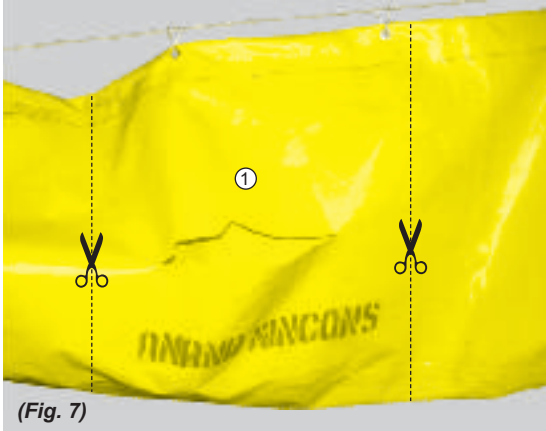
- Loosen the tension-bolt of Metal Coupling.
- Place the Metal Coupling over the entire periphery of the End-Ring of Duct-A and the overlapped Duct-B
- Position the triangular hook of Metal Coupling over the crown of the Duct.
- Tighten the tension-bolt of Metal Couplings. (Avoid over-tension)
- Suspend the Metal Coupling from it's triangular Suspension Hooks from the Overhead Wire-Rope Suspension Assembly.

Note : Flexible Couplings can also be used in place of Metal Couplings.





Rectifying A Damaged Duct



(Fig. 7)

1. Damaged Duct



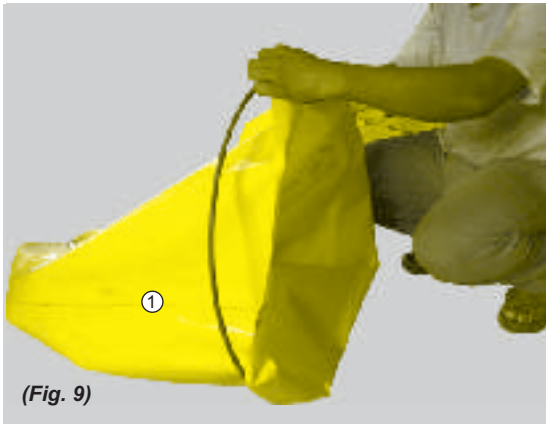
(Fig. 8)

1. Duct-A

- Cut and remove the damaged part of the duct marked "A"



- Bring another distance piece (marked “B” Fig.10) about 400 mm longer in length of the damaged part of duct, two End-Rings & two flexible Couplings to make the joints.

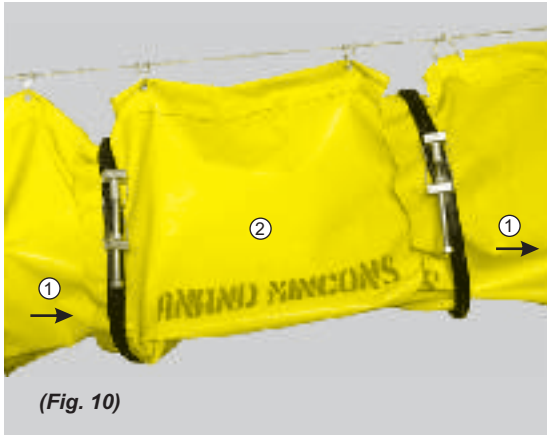


1. Duct-A

- Place one End-Ring over the Duct-A and fold back it's end to cover the End-Ring with an overlap of about 150 mm.



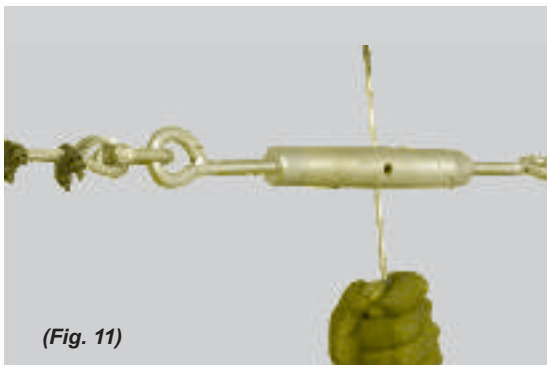
Note :- The end ring should always be towards the face side of the tunnel.



1. Duct-A 2. Duct-B

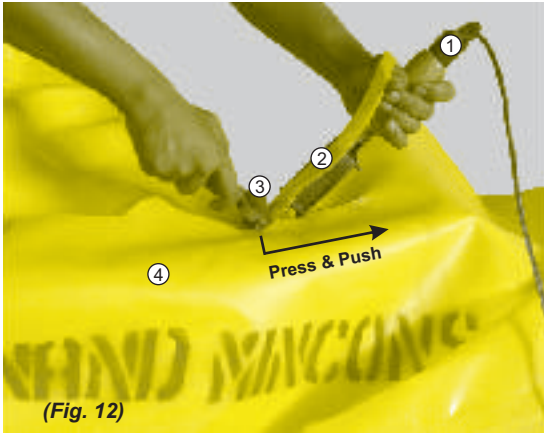
- Make the joint as explained in fig.10
- Repeat the procedure for the second End-Ring.
- **Note :** Metal Couplings can also used in place of Flexible Couplings.

Tensioning the Turn-Buckle of Overhead Wire-Rope Suspension Assembly



Note :- The end ring should always be towards the face side of the tunnel.

Rectifying A Damaged Duct With Hot Repairing Kit



1 - Hot Repairing Iron, 2 - PVC Strip, 3 - Roller, 4 - Damaged Duct

- Plug-on Hot Repairing Iron to 220 V AC supply and allow it's wedge to heat to a temperature sufficient to soften the PVC coating.
- Place the damaged duct “C” on a flat hard surface and clean the area round the cut.
- Cut a strip of PVC coated fabric to cover the length of damage.
- Place the hot-wedge over the cut and the PVC strip over the hot-wedge.
- Press the roller from behind and push the roller forward. Seal the edges around the “patch”.



Note :- The end ring should always be towards the face side of the tunnel.



Remember :

- Straightness of duct-line is essential for better results. Sudden deviations should be avoided.
- The joint-rings should be properly "strapped-on" at the joints and the tension bolts should be properly tensioned. Couplings should be installed in such a manner that all the tension bolts are on the one side of the duct-line to facilitate subsequent examination/tightening whenever required.
- The tubings, after extension, should be stretched fully to avoid any formation of kinks.
- Damaged ductings should be repaired with the help of Hot Repair Kit or replaced **immediately**.
- **Wires & nails should never be used for repairing.**
- Undue sag of the duct-line should be avoided by securing the duct-lines with the help of "vertical hangers" at every 3 m to 4 m interval.
- Vertical hangers should be used **only** for supporting overhead Head Wire-Rope Suspension Assembly and not to support ducts directly from it's suspension hooks.
- In case of vertical/inclined shafts, flexible-ducts should be securely fastened to the wire-rope-suspension assemblies.
- Sufficient clearance should be maintained between the duct & the mobile machinery. Any undue accumulation of muck/stones in the roadways should be removed periodically and floor should be kept clean.
- A minimum distance of 10 m should be kept between the fan and portal to avoid re-circulation of air.
- Adequate protection should be provided at the suction end of the fans installed at the portal to avoid any entry of rain water/foreign material into the duct-line.
- **A special team of persons** should be trained/dedicated for installation, repair and maintenance of the duct-line. Periodic inspection of the duct-line should be carried out by a competent person, especially authorized for this job and necessary remedial action should be undertaken to keep the duct-line in proper working condition.



Note :- The end ring should always be towards the face side of the tunnel.

Accessories



Galvanized M.S. Plate Joint
for Quick & Firm Locking



Hermetic Flexible Joint with
Tension Bolt Assembly



Overhead Flexible Wire
Rope Suspension Assembly



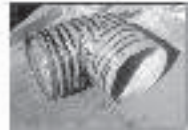
"T"



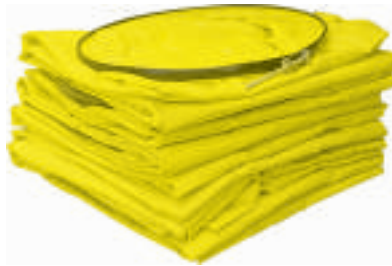
"Y"



Reducer



"L"



We also undertake assignment for a comprehensive planning of ventilation of tunnels. Wide range of customers from domestic & overseas markets have reposed faith in our products.



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