KIMPLAS
INSTALLATION MANUAL

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INTRODUCTION

TRUSTLENE is leading brand in the world of Electrofusion (EF), and Compression Fittings and Valves, Welding Machines and Tools.

This Installation manual includes all important aspects of installation of TRUSTLENE Brand fittings. These instructions describe Electrofusion jointing using the TRUSTLENE 40 V Electrofusion system.

Also covers Installation practices for compression fittings, PVC Ball Valves, DI Pipe Strap Saddles and KIMPLAS IRRIGATION PRODUCTS.

For detail information about products please refer Product catalogue also please refer GENERAL STANDARD PROCEDURE for PE Pipe installation.

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KIMPLAS reserves the right to modify product without prior notice as part of continual improvement program.
ELECTROFUSION FITTINGS

What is Electrofusion jointing?

Electrofusion is one of the methods of jointing for Socket and saddle type fittings where, heat is generated by inducing electric current into a wire coil which is a part of the fitting. With electro-fusion jointing, an electrical resistance element is incorporated in the socket of the fitting which, when connected to an appropriate power supply, melts and fuses the materials of the pipe and fitting together.

The effectiveness of this technique depends on attention to preparation of the jointing surfaces and ensuring the surfaces to be welded have satisfactory contact during the welding and cooling cycles. This can be effectively done by Pipe holding clamps or other approved methods of restraining, aligning and re-rounding the pipes during the fusion cycle.

Range of Application

These instructions describe electrofusion jointing using the TRUSTLENE 40 V electrofusion system. This technique is applicable to all types of TRUSTLENE electrofusion fittings.

General requirements for fusion jointing

The fundamental principle is that, only similar material can be fused. The melt flow index range of TRUSTLENE electrofusion products in PE is between 0.73 to 1.10 gm /10 min. They can be fused to PE pipes with a melt flow index range between 0.2 to 1.10 gm/10 min.

Electrofusion jointing must only be performed by trained personnel.

Compatibility

Permissible MFR range: 0.2 to 1.10 gm/10min. (Melt flow index at 190°C/5 kg. As per ISO 1133.)

Preparing the fusion joint

Protect the fusion area and the control box against moisture and contamination. The necessary generator output depends heavily on the ambient conditions as well as the electrofusion fittings being jointed. The generator must produce at least 22 A current & 40 V voltage 5 KVA for the full performance range of the fusion jointing devices to be utilized.
- **Preparing the Pipe**
  
  As pipes are carried in coils on site, pipe must be checked for out of roundness (ovality). The Ovality of fusion pipe must not exceed 1.5% of outside diameter of pipe.

  Rerounding clamps for pipe sizes 63-180 can be used for correct assembly and alignment of pipe in fitting for uniform melt pressure within the joint.

  For Cutting pipes to required lengths, different types of pipe cutters like Ratchet type-snap cutters, rotary cutters & Eclipse saw can be used as per different ranges of diameters.

  Pipe ends must be cut square for welding socket fittings, Ensure that resistance wire in the fitting is completely covered with suitable clearance between the pipe and fitting. Clean the pipe surface to be inserted in to socket with a dry cloth. Cover the pipe ends remote from the fitting joint, to ensure that no airflows through the pipeline during the heating and cooling cycles.
Mechanical Scraping of pipe

During scraping the outer oxidized layer of pipe gets removed and the clean surface is available for Electrofusion jointing.

- Wipe pipe ends using clean, disposable, lint free material to remove traces of dirt mud, etc. Pipe ends may be washed with clean water if necessary and dried with the lint free material. Ensure pipe end is completely dry before proceeding.
- Mark the area +50 mm beyond the fusion area.
- For socket fitting measure the depth of penetration of the fitting by placing the socket of the bagged fitting alongside the pipe end and put a witness mark on the pipe at half the fitting length (i.e. Center Mark) to indicate the area to be scraped. Do not remove the fitting from its packaging at this stage.
- For Saddle fitting mark the area for scraping by putting saddle on pipe without removing the packing.
- Carefully scrape the whole circumference of the pipe in axial direction over length using a rotary / hand scraper
- Mechanical scrapping is not necessary in case of PE spigot ended fusion fittings and spigots of electrofusion tapping tees, since the method of packaging prevents surface contamination which could adversely affect fusion jointing.
- When rotary scraper is used, no second scrapping must be performed.
- Wipe the scraped surface with an authorized Isopropanol impregnated pipe wipe or with isopropyl alcohol (IPA) & tissue paper for degreasing the scraped area or soiled fittings.
- Mentholated spirits, acetone, methyl ethyl ketone (MEK) solvents are not recommended for wiping the scraped surface. Ensure the prepared surfaces are completely dry before proceeding.

PREPARING THE PIPE

1. MARKING
2. HATCHING
3. SCRAPING
4. SCRAPING UPTO 0.25MM THICKNESS
5. APPLY IPA
6. CLEAN THE PIPE SURFACE
For Good practices

a) Always Mark the area to be scraped before scraping.
b) Use a mirror to inspect while scraping the underneath pipe surface.
c) While scraping remove the entire surface of the pipe over the area indicated, to a depth of approximately 0.3mm.
d) Pipe must be scraped so that shavings of uniform thickness are formed.
e) Remember to de-bur the pipe ends after scraping.
f) Do not touch the prepared pipe surface.

ELECTROFUSION JOINTING FOR SOCKET FITTINGS

Socket fittings mainly include coupler, reducer, endcap, equal tee and elbow.

Basic guidelines of electrofusion jointing procedure are same for all types of socket fittings.

- Procedure for electrofusion coupler
  
  o Scrape the necessary pipe surface as per above Mechanical Scraping procedure.
  o Remove the fitting from its packaging and check the bore of the fitting is clean. Do not touch the fusion zone of the fitting or allow it to be contaminated.
  o The bore of the fitting may be wiped with an approved pipe-wipe if necessary. Ensure the bore is completely dry before proceeding.
  o Insert the pipe end(s) into the fitting so that they are in contact with the centre stops. It is a good practice to mark the insertion depth on the pipes before insertion to ensure full insertion depth is reached.
  o Check that the pipe clamps are of the correct size for the pipes to be jointed.
  o Use pipe clamps, or other suitable means, secure the pipe(s) so that they don’t move during the fusion cycle. Check that the pipe end(s) and the fitting are correctly aligned.
  o Alignment of the assembly shall be checked by freely rotating the clamped fitting.
  o Clamps like KIMPLAS Welding make V- Clamp allow all sizes of pipes to be held, including Non Standard sizes with range of 63-400mm. diameters. Also Various TRUSTLENE multi alignment clamp can be used for sizes of 16 – 63 mm DIA.
  o Preparations are now complete and fusion jointing can proceed.
ELECTROFUSION JOINTING FOR SADDLE FITTINGS

Saddle type fitting mostly include tapping Tee, tapping or Branch saddles, Flexifit tapping TEE and Purge and bypass Tee.

TRUSTLENE Purge and Bypass Tee is specially developed product for safe Purging and Venting Procedure in Gas Industry. These fittings are with Flexi-Base and same product can be fitted on pipes of different range of diameters. Basic guidelines of electrofusion jointing procedure are same for all types of saddle fittings.

- Procedure For Electrofusion Tapping Tee

I. Scrape the necessary pipe surface as per above Mechanical Scraping procedure for saddle type fittings.
II. Remove the fitting from its packaging and check the matt of the fitting is clean. Do not touch the fusion zone of the fitting or allow it to be contaminated.
III. For fusing tapping tees correctly, sufficient amount of top load should be given properly on fitting.
IV. TRUSTLENE top loading clamp suitable for different diameter range can be used. This clamp can load saddle on to pipe for required load.
V. TRUSTLENE Strap type saddle clamp are light weight for easy transportation on site & are suitable for pipe dia. Up to 500mm.
VI. Degrease the heating mat with cleaning fluid IPA and white tissue paper. Now fit the tapping tee on pipe with its top attached to the spring of top loading clamp. Tighten the Knob (hand wheel) of clamp until the adjusting spindle (indicator rod) is flush with the top surface.

For TRUSTLENE tapping tees,

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Clamping Force</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nominal</td>
</tr>
<tr>
<td>32 – 20</td>
<td>500 Nm</td>
</tr>
<tr>
<td>50-25 to 250-32</td>
<td>1500 Nm</td>
</tr>
</tbody>
</table>

For Good practices

a) Use calibrated Clamps with Proper TOP LOAD.
b) Do not alter the factory set position of the integral cutter.
c) Do not remove clamp until fusion area has cooled down.

Preparations are now complete and fusion jointing can proceed. (See Para fusion jointing procedure and tapping operation)
**Procedure For Electrofusion Wrap Around Tapping Tee (WATT)**

1. The wrap around tapping tee follows similar procedure as like in top load tapping tee, but the wrap around tapping tee does not require any top load clamp.
2. Scrape the necessary pipe surface as per above mechanical Scraping. Ensure the fitting surface is dry and clean.
3. Fix the tapping tee body and insert the bottom wrap on lower surface of pipe use mallet if required.
4. Ensure the bottom wrap is holding tapping tee on proper position with pipe.
5. Where screwed type bottom wrap is used, fit the TT body on the pipe, put wrap around, tighten the screws fully.
6. Preparations are now complete and fusion jointing can proceed. (See Para fusion jointing procedure and tapping operation)

**ELECTROFUSION JOINTING FOR SPIGOT FITTINGS**

Spigot fittings mainly include spigot type End cap, flange adaptor, Long Neck Pipe Ends (LNPE), elbow 90° and elbow 45°, Reducer etc.

- a) Spigot fittings duly packed in air tight in plastic bag don’t need of scraping on spigot end.
- b) Ensure fitting is free from contaminants, moisture and dirt by cleaning with IPA and Tissue paper.
- c) Clamp the fitting with suitable clamp and ensure proper alignment especially for Spigot Long Neck Pipe Ends (LNPE).
- d) After completion of preparation of joint please follow Fusion Jointing Procedure.
- e) Assemble other end of fitting with necessary component as per application with the help of standard joining procedures.

**ELECTROFUSION JOINTING FOR METAL TRANSITION FITTINGS**

The metal transition fittings mainly include the fittings with one end for metal pipe and other one for PE Pipe.

- Prepare the pipe surface with above Manual scraping Procedure for Socket Fitting.
- Ensure inner side of fitting clean and dry. Follow the same procedure for fusion jointing of coupler.
- Join the metal part of other end with threaded pipe as per standard procedure.
ELECTROFUSION PROCEDURE FOR INTEGRAL FITTING

1. Scrape the necessary pipe surface as per above Manual Scraping Procedure.
2. For Integral type Socket fitting prepare pipe surface as done for normal socket fitting jointing.
3. For Integral type Saddle fitting prepare pipe surface as done for normal saddle fitting jointing.
4. Now take out the fitting from the bag clean the fusion zone with IPA & tissue paper. Ensure the fusion area is free of any contamination and dirt.
5. After fixing fitting on pipe surface ensure proper alignment with the pipe, use the re-rounding clamp for oval pipes, particularly for coiled pipe.
6. Tighten the screws for sufficient torque so that fitting is firmly attached with pipe.
7. Preparations are now complete and fusion jointing can proceed. (See Para fusion jointing procedure and tapping operation)
**Fusion Jointing Procedure**

**KIMPLAS WELDING EF MACHINE KWS 500**

KWS 500 electrofusion welding machine can be operated on Automatic or manual mode. It is suitable for all TRUSTLENE 40 V electrofusion system of fittings. KWS 500 is specially designed for 230 v input and with special error indication system.

- **Procedure For Electrofusion Jointing**
  - Remove the blue shroud caps on the connector pins of the fitting (where provided).
  - Connect leads of control unit with connector pins.
  - Bring the terminals into favorable position for connecting. Weight of cable must not be supported by terminals.
  - Put ON the fusion control box, which will indicate whether the voltage and frequency are in permissible tolerance.
  - Select the Automatic or manual mode
    - For Automatic mode Read the bar code on the fitting with bar code reader pen/scanner of the Electro-Fusion machine. Check that the correct time as indicated on the Bar code is shown on the control box display. When resistance of the fitting as measured by machine tallies with the bar code, the machine confirms it by message “Resistance Verified OK”, if not, “Error”. Temperature compensation is automatic.
    - For Manual mode or manual machine, feed the 24 digit code on control box or select exact data for fusion. In case of manual mode the time and voltage as indicated on the fitting/sticker is set manually. For temperature compensation, time is set manually as per chart given with fitting.
  - Before proceeding further once again confirm the given parameters. Press the “START” button on the control box and check that the heating cycle is proceeding as indicated on the display.
  - The fusion box will display the cumulative fusion time in seconds. Upon completion of fusion cycle, check the fusion indicators of the fitting. This is a special advantage offered by this system.
  - Cool the fitting up to minimum cooling time as indicated on the fitting / barcode.
  - If a satisfactory joint has been made as indicates by the fusion indicators the joint should be left in the clamps for the cooling period specified on the fitting. Mark the clamp removal time near the joint after the fusion joint is completed to ensure that the clamp is not removed before completing the cooling cycle.
For Good practices

- If the fusion process is interrupted for any reason e.g. due to a power failure, the fusion process can be repeated with all TRUSTLENE electrofusion fittings. However; in such cases the joint must be allowed to cool down to ambient temp before restarting the fusion process. Use the specified cooling time of the fitting for guidance. During re-fusion, use the specified fusion time to run the complete fusion cycle.
- Carry out fusion only on a completely dry surface. Use temporary & shiftable tents (canopies) during rains.
- Use a good quality electric generator of rating as recommended by the fusion box manufacturer.
- Ensure that sufficient fuel is available in generator for uninterrupted fusion process. Also it should be switched ON and running satisfactorily before connecting the electro-fusion control box to the power source.
- Fusion box cables should not be tangled or stretched.
- Use adaptor terminals of 4mm or 4.7mm as appropriate on fusion cable.
- Identify the required jointing time, which should be indicated on the fitting.
- It is a good practice to assign a unique reference number to each fusion joint and to maintain the fusion data either manually or through data logging in the fusion box.
Procedure For Tapping Operation

Tapping procedure is mainly applicable to fittings like tapping tee, Flexifit tapping tee, tapping saddle etc.

a. Fix the fitting as per above procedure for Electrofusion jointing.
b. No tapping should be performed before the completion of minimum cooling time.
c. Remove the top screw cap. Rotate the integral cutter with the help of hexagon Allen key clockwise until the pipe is tapped through.
d. Rotate the integral cutter anti-clockwise until it is firmly against the upper stop. The Cutter will seal in this position completely.
e. Fully screw the top cap by hand. Make sure the O-ring is properly fixed in cap for tapping tee.
f. Follow the instructions of the manufacturers of fittings, machines, tools and generator strictly and do not resort to any short cuts.

Installation Of Polyethylene Pipe With Fittings

The flexibility of PE allows the accurate alignment of the pipeline to awkwardly contoured trench beds on undulating sites. Apart from the avoidance of high stress environments and unsuitable ground situation as mentioned previously, the selection of layouts and routes for PE pipelines needs no other special consideration than that which would be given to other pipeline material.

It is essential that pipelines are laid on a bed of material which will provide even and continuous support. In suitable soils this can be provided by the hand trimming of the base of the trench with any predominantly hard or soft spots being removed and replaced by compacted fine material.
UNDERGROUND INSTALLATION OF PE PIPING

Where such trimming cannot be easily achieved (e.g. in narrow trenching), small irregularities can be overcome by the placing and compaction of selected site material. Suitable materials for bedding and surround include free draining sand, gravels and soils of a friable nature, which are then compacted in layers. This “fine fill” material is acceptable up to a maximum of 250mm above the pipeline after which the fill is to be backfill material. Bricks or other hard material should not be placed under the PE pipe as temporary support.

Recommended separation distance between two fittings or Squeeze offs

It is important to use this table of fitting distances to stop pipe distortion and stress due to heat transfer.
INSTALLATION PROCEDURE for PURGE & BYPASS STACK ASSEMBLY:

1. INSTALL PURGE AND BYPASS TEE.

2. REMOVE THE PLASTIC CAP & FIX ALUMINUM ADAPTER CAP.

3. FIX PURGE TUBE ASSEMBLY WITH THE HELP OF STAND & ENSURE BALL VALVE IS CLOSED.

4. MAKE SURE EARTHING IS CONNECTED TO GROUND.

5. DRIVE THE INTEGRAL CUTTER WITH A KEY TO CUT A HOLE INTO THE PE PIPE.

6. AFTER MAKING HOLE TAKE CUTTER TO TOP MOST POSITION AND FIX THE CAP.
7. OPEN THE VALVE.

8. DURING VENTING BURN THE GAS WITH THE HELP OF END OF LINE- FLAME ARRESTOR.

9. USE SNIFTER VALVE DURING PURGING OPERATION.

10. AFTER PURGING/VENTING LOWER DOWN THE CUTTER TO PLUG THE DRILLED HOLE ON PIPE.

11. REMOVE RISER ASSEMBLY AND FIX THE PLASTIC CAP.
Composite Strap Saddle for Water

(DI Saddle)

These saddles are suitable for tapping on DI and CI pipe.

INSTALLATION

1. Select appropriate size of DI saddle assembly according to the pipe size.
2. Drill a hole of appropriate size on pipe as required for the installation of saddle. Drill hole size is specified on the product.
3. Remove SS Nut and Washers, curved plastic washer and saddle body saddle strap.
4. Insert projection portion of saddle seal in to the hole to ensure it gets inserted into pipe positively.
5. Wrap saddle strap assembly around pipe, near the place of fitment.
6. Insert two bolts of saddle strap assembly through the two holes of saddle body.
7. Insert two curved washers into the bolts and align to rest on curved surface of saddle body.
8. Put SS washer and screw on SS nuts.
9. Tighten the nuts until the stopper bushes touch saddle body up to its limit.

Fig. Assembled DI Saddle
Compression fittings

Kimplas compression fittings are widely used in Drinking water and irrigation segments; it can also be used for different types of permitted chemicals with PE pipe.

These compression fittings mainly includes compression coupler, threaded adapters, compression elbow with threaded off take etc.

Kimplas compression fittings are rated PN 16 and are designed to use with all type of polyethylene pipes i.e. HDPE, MDPE (grades PE 100, PE 80, PE 63).

INSTALLATION

1. Pipe ends must be cut square and burr-free before using with the fittings. Chamfer may be provided on the pipe end to facilitate ease of pipe insertion.
2. No need to open fitting & take apart components separately. Just loosen the QJN (Quick Joint Nut) by three to four turns.
3. Insert the pipe into the fitting up to the stopper.
4. Hand Tighten the QJN for fittings up to 32 mm.
5. Use Wrench to tighten the QJN after hand tightening for fittings 40 mm and above.
6. After Firm Hand Tightening, Tighten the QJN with wrench only for a quarter turn

Fig. Assembled Compression fitting (FTO)

Fig. Compression Fitting - Elbow with Female Threaded Offtake

Above mentioned installation procedure is the same for different types of kimplas Compression Fittings. Proper Installation practices ensure long life of fitting and trouble free services.
PVC Ball Valve

Compression end UPVC Ball valves are very useful for Quick joint of PE Pipe with threaded fittings & Metal pipes. These Valves are mainly used in drinking water distribution piping for HSC (House Service Connection) & in Irrigation for connecting fertigation equipment like Venturi, Fertilizer Tank and Dosing Pump etc. These Valves are recommended for cold water services within Temperature range of 0° c to 40° c.

INSTALLATION

1. Pipe ends must be cut square and burr-free before using with the fittings. Chamfer may be provided on the pipe end to facilitate ease of pipe insertion.
2. No need to open fitting & take apart components separately. Just loosen the QJN (Quick Joint Nut) by three to four turns.
3. Insert the pipe into the fitting up to the stopper
4. Hand Tighten the QJN for fittings up to 32 mm.
5. Use Wrench to tighten the QJN after hand tightening for fittings 40 mm and above.
6. After Firm Hand Tightening, Tighten the QJN with wrench only for quarter turn.
7. On threaded side, threaded pipe, water meter & other threaded fittings shall be screwed on by using sealant tape (Teflon or Plumber’s tape).

Fig. Assembled Ball Valve with Compression End
House Service Connection

Now days the water service connections are mainly given using PE Pipe & compression fittings due to various advantages over Metal distribution system. Also the Exiting Metal (DI/CI) piping can be tapped to provide house service connection using DI Saddle. The following Layouts give idea about typical installation of House Service Connections using different methods.

Typical House Service Connection with EF Tapping Tee on PE Pipe

Firstly Join the Tapping Tee and Couple by Electrofusion jointing. Fix the pipe with the compression fitting as per site conditions using 90° double compression elbow, compression Metal FTO, and Regulating Brass ferrule, UPVC Ball valve with compression end & Water meter respectively.

For Tapping PE pipes use EF Branch Saddle with female threaded outlet and Metal compression threaded elbow (MTO) as shown in the same sequence as above.
Typical House Service Connection with EF Tapping Branch Saddle on PE Pipes

The Existing DI/CI Pipe can be trapped using DI Saddle and Connection can be continued with various compression fittings as per site conditions.

Typical House Service Connection with DI Saddle on DI Pipes
The Kimplas filters are exclusively designed for Micro-irrigation systems. The Filters with very attractive features like ease of installation and Maintenance and service and day to day operations.
Kimplas recommends the vertical inverted position of filter because of sturdy support of outlet pipe also the position is helpful for the easy cleaning and maintenance for customer.

Use angular connection with inlet – outlet at right angles to each other OR inline connections with inlet-outlet lying on the same axis, as appropriate. Keep the optional outlet closed with the cap provided.

The Drain port can be used as Fertilizer injection Port with the help of Threaded Plastic TEE with water source from one end & Drain From the other.

**Assembly:**

While closing the housing, please ensure that the strainer element & element ring are properly aligned with the manifold cup so that, no unfiltered water flows through the filter, bypassing the element.

Do not leave the clamp loose fitted, Lock completely by toggle action. Fit the clamp using hand force only. Do not use rod, screw driver etc. for extra leverage.
INSTALLATION:

- **Maintenance:**
  - Clean screen filters every day or every two to three days depending on frequency of chocking. But if pressure difference between the inlet and outlet of the filters is more than 0.5 kg/cm² then clean the strainer element immediately.
  - Before opening the filter for cleaning the strainer element, drain all the water inside the strainer through the drain valve. Then open the clamp, remove the shell and element together slowly. Ensure that the impurities collected inside the strainer are removed drained out completely.
  - CAUTION – Never open the clamp when filter is under pressure.
  - The Screen (combination of plastic & stainless steel) element should be thoroughly cleaned with the nylon brush provided, under a thin jet of water. The element should then be placed in its original position, correctly aligned with top and bottom housing cups and the clamp should be tightened.
  - The disc (Plastic) element in QAT Type Filter is self cleaning because of Turbo helix Ring provided. In case of clogging it should be thoroughly cleaned with thin jet of water by separating discs with the help of spindle of element.

- **PRECAUTIONS:**
  - While assembling the filter in piping network use standard GI / PVC fittings, preferably ISI marked.
  - Use pipe wrench for proper tightening of the fittings, use sealants such as “Teflon Tape”, “Safeda”, “Hold Tight”, Threads (Jute Fibers) etc. wherever required.
  - We do not recommended back-flushing of the strainer (by reversing the direction of flow of water); please ensure that the water flow is always from outside of the element to inside. This is applicable to both Screen & Disc elements of KIMPLAS Filters.
  - If the irrigation water contains heavy loads of algae, plant leaves, shells, etc. the strainer elements get chocked up frequently. In such a case a sand filter is recommended before strainer.
  - If the irrigation water contains heavy loads of sand, silt, grit, etc. the strainer elements get chocked up frequently. In such a case a hydro-cyclone filter is recommended before strainer.
  - If the pump requires frequent priming, never add cow dung slurry in suction pipe of pump, otherwise it will choke up the strainer element.
  - Never use stones or other rough and hard material to rub the screen surface. Always use plastic brush for clearing the screen surface. Mechanical damage of any kind to the strainer element should be repaired in time OR the element should be replaced.
  - Never use the systems without filter element inside the filter.
  - Also please refer the Drawing on Filter Shell/Body for Recommended Installation Layout.
  - PVC Coupler/FTA can be provided with filter if required.
STANDARD INSTALLATION OF FILTER

KIMPLAS recommends the following type of installations for various benefits to customers

Recommended Installation of Filter

Kimplas filters provide choices for installation as per availability of space and convenience at site. Installation is possible in any position, both vertical and horizontal; inlet-outlet connections possible in both inline and angular orientation.
MINI IMPACT SPRINKLER

INSTALLATION OF Kimplas Mini Impact S 10 Sprinkler
ASSEMBLY INSTRUCTIONS:

1) Install the sprinkler piping, valves, fittings etc. in the field.
2) Drill Sprinkler pipe with 8mm Kimplas Drilling tool at the point of intended sprinkler installation.
3) Insert S-10 Sprinkler Female Connector ½” in the drilled hole.
4) Cut 8mm Flexible-PVC tube to the required length and connect S-10 Sprinkler Male Connector ½” at its one end and S-10 Sprinkler Adaptor ½” at the other.
5) Install 8 mm metal rod (riser) by pegging in at the point of intended sprinkler installation and fix the Sprinkler Adaptor ½” on it.
6) Insert the Male Connector ½” into the Female Connector ½” and press fit.
7) As far as possible use ready to use PVC Tube assembly Supplied by KIMPLAS.
8) Take out Sprinkler S-10 from PE bag and ensure that sprinkler is in good physical condition, without any breakage or transit damages. Damaged sprinklers shall not be installed.
9) Install KIMPLAS Mini Impact Sprinkler directly on threaded adaptor supplied by KIMPLAS without any sealant. For Threaded adapters of others make Put 2 to 3 layers of Teflon Tape on the hex nut threads of the sprinkler. Ensure that no Teflon tape is put on the sprinkler washers below the threads. Never use any other thread sealants like ‘Hold-Tite’, ‘Shellac Compound’, ‘jute threads’, ‘Safeda’ etc.
10) Screw on the threads of sprinkler on the Female Adaptor ½” and gently tighten with spanner. Rotate the balancer with hand, it must rotate freely. If it doesn’t, remove the sprinkler to ensure that the sprinkler rotation is not obstructed by Teflon tape or inside surface of the adaptor.

➢ PRECAUTIONS FOR S-10 SPRINKLER USE:

1) Handle with care. Protect the sprinkler from external impacts.
2) Never lubricate the sprinkler with oil, grease or kerosene. The moving parts are water lubricated.
3) Grit (fine sand / soil particles) trapped in sprinkler parts may create friction during sprinkler rotation. Wash the sprinkler with clean water only to remove grit. Water borne debris such as sand / stone particles, algae, sticks, plant leaves, insects etc. stuck up in the nozzle may be flushed away by removing the nozzles and refitting the same.
4) Never use sharp objects such as wire, screw driver, blade etc. to clean the nozzle as it may damage the orifice of nozzle. Insects/spiders etc. may nest inside the balancer spring/cap and
obstruct free oscillation of the balancer. It shall be cleaned by removing the plastic cap and refitting the same.

5) Obstruct free oscillation of the balancer. It shall be cleaned by removing the plastic cap & refitting the same.

**Plot Layout:**

For Best performance of Sprinkler and System Kimplas Recommends the following type of layout.

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Sprinkler installation should be at 10m X 10m spacing with riser height of 1m.

We recommend use of filter for trouble free operation of sprinkler unit.
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