

315 MM INSPECTION CHAMBER

Astral's innovative design for 315 mm, brings unmatched flexibility to the underground drainage market. The joints & seals are designed such that they can accommodate the movement of connecting piece up to 3° in any direction.

This is of great assistance to the installer where the connecting pipes are not perfectly aligned with the chamber inlets. In many instances it will eliminate the need to install an extra bend and provide a saving on the cost of the installation. The chamber base is designed to facilitate the stacking of bases on top of one another to give a space saving storage solution for the merchant stockist. In summary, the Inspection Chamber design and flexibility provides a practical, innovative and cost effective solution for the provision of access in a drainage system.



450 MM LARGE DIAMETER INSPECTION CHAMBER

Astral's product innovation is again demonstrated with the introduction of a new 450 mm. diameter large inspection chamber. Significant research and development has gone into the design of this unique product. The Chamber base incorporates Ø2-160 mm & Ø2-110 mm inlets with main through of 160 mm. Also 160 mm inlets can be converted to all 110 mm inlets with reducer which allow 3° of movement in any direction. The plastic cover and frame can take loadings up to a maximum of 35kN.



INSTALLATION PROCEDURE - 315 & 450MM CHAMBERS

Installation of the chambers is to be done with the standard practice and as requirement of local authorities.

General installation figures are provided herewith for different type of installation mainly based on traffic loads which are going to impose on system. Fig. 1 is for installation of 450mm chamber base with durable polypropylene cover and frame having wheel load up to 3.5 tonnes. Suits pedestrian areas / domestic driveways. Fig. 2 is for installation of 450 mm chamber base with RCC cover and frame having wheel load up to 20 tonnes. Suits heavy traffic loads. Fig. 3 is for installation of 315 mm chamber base.

Astral® 315 mm chamber to be used with three risers. Depth are as shown in the chart below.

315 mm Chamber	Height mm
Only Body	240 mm
With One Riser	375 mm
With Two Riser	510 mm
With Three Riser	645 mm

Astral® 450 mm chamber to be used with three risers. Depth are as shown in the chart below.

450 mm Chamber	Height mm
Only Body	345 mm
With One Riser	575 mm
With Two Riser	740 mm
With Three Riser	905 mm
With Four Riser	1065 mm

315mm Inspection Chamber Installation

1. Chamber base
2. Fix riser on Chamber base
3. Riser with Chamber base
4. Fix another riser on Chamber base
5. Fix rubber ring on frame
6. Fix frame
7. Put lid on it
8. Tighten with Screw
9. Fix foamcore pipe in inlet

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GENERAL STEPS FOR INSTALLATION :

- The chamber base should be bedded with suitable granular material or single size aggregates having no sharp edges on 100 mm depth for light traffic load conditions. For heavy traffic load conditions (Fig.1 & Fig.3), the base should be surrounded by concrete as shown in Fig. 2.
- When Astral® PP cover and frame is used, the cover and frame is to be supported on a concrete base while the chamber is surrounded by granular backfill 150mm wide as recommended. When RCC or other cover is used, the chamber should be fully supported in concrete surround.
- Connect the pipes with rubber lubricants as per the standard joining procedure.

Figure 1 : Polypropylene lockable cover & frame 3.5 tonnes wheel load suits pedestrian areas/domestic driveways

Figure 2 : RCC cover & frame for higher wheel loads

Figure 1 :

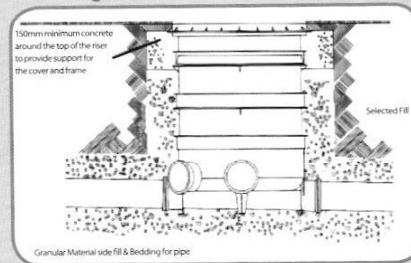


Figure 2 :

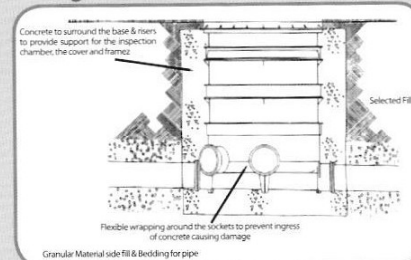
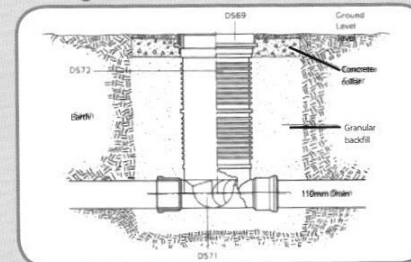
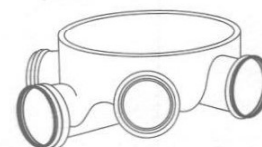
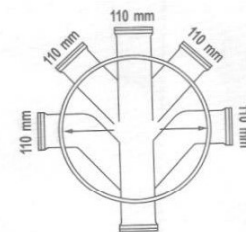


Figure 3 :



315 MM INSPECTION CHAMBER SYSTEM



- Base units are supplied with lubricated blanking plugs. These may be pushed out on site when required and used to secure unused inlets.
- When making joints, the pipe spigot must be well chamfered, de-burred, cleaned and lubricated using Astral's lubricant.
- The pipe is then pushed into the socket allowing a clearing for subsequent expansion i.e., pipes should be pushed home fully and then withdrawn by 10 mm.
- Depending on the depth of invert required, use combination of the chamber base and risers. The riser can be cut for the intermediate depth. Use rubber seal ring in between chamber base and riser for 450 chamber and between last riser and cover for 315mm chamber. For subsequent risers, rubber rings are not required.
- Place the frame and cover to meet the site requirements and depending on the traffic loads.

INSTALLATION - 450MM CHAMBER

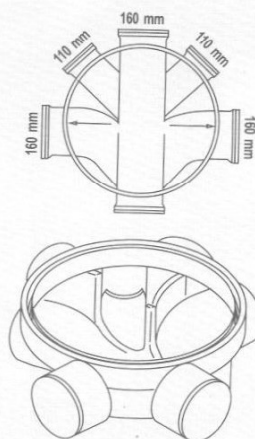
- Backfill the pit with granular material with 150 mm width. Properly compact the backfill material, if needed watering can be used.
- 6" PCC / RCC at the top is recommended for heavy traffic loads. The frame should be properly embedded in these concrete and then the cover should be placed on it.
- If the chamber is to be installed in ground where the water level may rise above the invert level of the chamber, the chamber must be bedded on and surrounded by concrete.
- Precaution must be taken to protect chamber from damage by construction site traffic.
- During backfilling, always place the cover and frame in position to prevent ingress of foreign matter into the drain and excessive deflection of the chamber walls.

ASTRAL UNDERGROUND - PRODUCT DETAILS:

ASTRAL Underground Chamber	Invert Depth		Component	Size of Inlet(s) Outlet		Material	Load Capacity
	Min. (mm)	Max. (mm)		Main inlet(s) Outlet	Main inlet(s) Outlet		
315	230	600	Base	110	110	Polypropylene Impact co-polymer	
			Raiser			Polypropylene Impact co-polymer	
			Frame & Cover			Polypropylene Impact co-polymer	1.5 tone wheel load
450	340	1200	Base	160	02 No. 110 mm	Polypropylene Impact co-polymer	
			Raiser		02 No. 160 mm	Polypropylene Impact co-polymer	
			Frame & Cover			Polypropylene Impact co-polymer	3.5 tone wheel load

NOTE: These chambers can be used for higher load capacities using RCC covers on top of them. Normally load capacities are applied to covers, not to chambers.

450 MM INSPECTION CHAMBER SYSTEM



450mm Inspection Chamber Installation



ASTRAL® GULLIES



GULLIES

A gully holds water, like a trap, to stop foul air escaping from the foul drainage system. Its purpose is to accept waste water from ground floor bathrooms, kitchens and utility rooms or rainwater from paved areas or roofs.

ASTRAL® BOTTLE GULLY

ASTRAL® bottle gullies can be used to remove surface water from paved pedestrian areas. Side and back boss inlets accept waste water from ground floor domestic applications and / or rainwater from roofs.

By adding a raising piece the gully grating can be installed where paving is set at varying heights, where a new surface is laid or if deep bedding is required. It can be cut to the desired length to allow the gully to be installed at depths of up to 600 mm, reducing the need for additional bends.

The Bottle Gully has one 110 mm outlet and three closed inlets for either waste pipe or 110 mm connections. To discharge waste pipes to this gully adapt the smaller

closed inlets by drilling them out with a 48 mm hole cutter and use the correct adaptor for the boss to accept the 32mm, 40mm and 50mm waste pipe.

Ideal for domestic, industrial and commercial installations.

Accepts waste or rainwater pipework from 32mm up to 110mm sizes includes sealed rodding access

Size Available : 160mm x 110mm

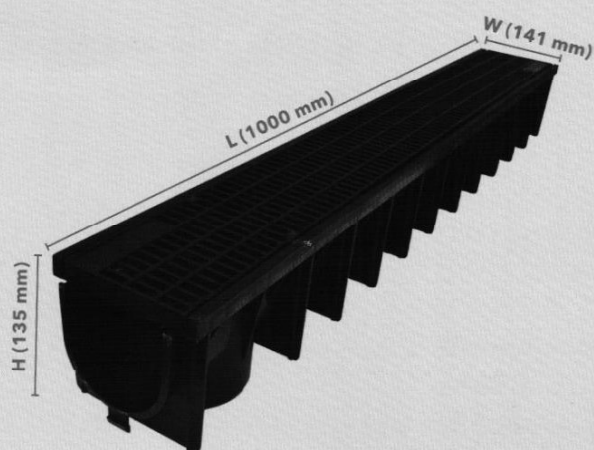


ASTRAL® SURFACE CHANNEL



The surface channel that are used at present are of cast iron or in concrete and due to their heavy weight it is difficult to handle or storage or to install and more over they are prone to corrosion. ASTRAL® offers surface channel made from polypropylene and they are free from above problems caused by traditional surface channel.

AVAILABLE SIZES : 110 mm x 1mtr (L x H x W) Long End. LH & RH both end caps are available.



LH END CAP



RH END CAP



COVER TEE



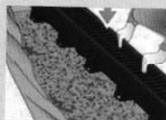
SALIENT FEATURE :

- Tough and durable
- Excellent corrosion and chemical resistance
- Environment friendly • Light weight
- Easy to install • Cost effective.
- Saves labour and material cost
- Effective substitute to C.I and concrete channels.
- Durable design resists up to 1 tonne wheel load

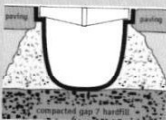
FIELD OF APPLICATION :

In various applications like pavements, road side curbs, cycle ways and car park area, shopping malls, sports grounds, building terrace, corporate houses, hotels, hospitals, academic institutes and many more places where surface drain is necessary.

INSTALLATION GUIDLINE :



Sufficient slope in the paving and channel should always be determined prior to installation to accommodate desired water run-off. Place channel in trench



Always backfill with concrete with the grating fitted Haunch concrete up and around channel without leaving any empty spaces



Engage all modules including bends before backfilling



Simple push-together channel system for ease of installation.

SPECIALLY DEVELOPED FITTINGS

ADJUSTABLE BEND :

Adjustable Bends are specially designed by ASTRAL® to suit with installation of inspection chambers. As the chamber inlet and outlets have fixed angle & position, adjustable bends can be changed depend on site requires. These bends are available in two different patterns one with 02 pcs (suitable for 5° to 37.5° movement) & 03 pcs (suitable for 0° to 87.5° movement). These bends eliminates use of extra fittings and pipes to get the angle with pipeline and hence very cost effective. Also it is durable, leakage free and very easy to install at any angle.

LONG RADIUS REST BEND :

This is specially designed to take the load of vertical shaft and the sudden impact of drain & sewer falling down from the vertical lines. The rib on the curve area will strengthen the bend and give adequate support to act as counter force against load due to falling sewer & drain.

ACCESS AND RODDING POINTS :

Access is very important on all installations for testing, inspection, and removal of any blockage or debris. Rodding in both directions can be achieved by using a 315 mm or 450 mm Large Inspection Chamber in conjunction with access fittings. Rodding points are more usually used in storm water drainage systems where the rodding point is located at the head of the drain run connection to a chamber, and being no further than 22 meters away from the chamber. The rodding point should be enclosed in a concrete surround to provide support and to ensure that it does not become mislaid at ground level. Rodding points eliminates the need for majority of conventional manholes. By using various combinations of rodding point with ASTRAL's other standard range of fittings, considerable savings can be achieved on cost of underground drainage system.



2 Pc Adjustable Bend



3 Pc Adjustable Bend



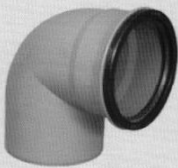
Long Radius Bend



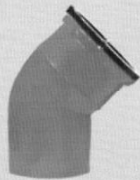
Access and Rodding Points

STANDARD FITTINGS

ASTRAL UNDERGROUND® MOLDED FITTINGS



Bend 87.5°



Bend 45°



Single Tee



Swept Tee



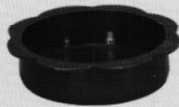
Swept Tee With Door



Single "Y"

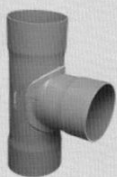


Coupler

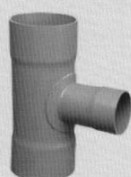


Blanking Plug

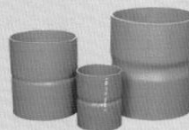
ASTRAL UNDERGROUND® FABRICATED FITTINGS



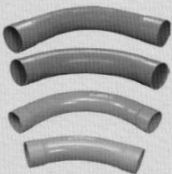
Equal Tee



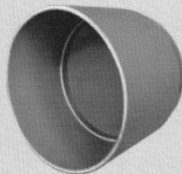
Reducer Tee



Fabricated Coupler



Long Radius Bend



End Cap

*Other Molded / Fabricated fittings are available on request.



ULTRA MODERN DRAINAGE SYSTEM

KEY FEATURES :

- Pre-fabricated system - complete with benching, shaft, steps and accessories.
- Stream line design and mirror smooth internal surface finish.
- Multiple configuration options in single piece.
- Multiple inlet options with a variety of inlet and outlet sizes in single piece.
- Fast, Easy, Flexible and Safe installation in hours with leak proof pipe connections in minutes.
- Completely water tight with no infiltration or ex-filtration.
- Ultra durable and resistant to corrosion.
- Can be very easily installed in heavy traffic or water logged areas.
- High quality as per latest European Standard EN 13598 leading to consistent quality for entire project.
- Maintenance Free.
- Reduced operating cost - minimal blockages due to hydraulically optimized channels, no Infiltration.
- Environment friendly - watertight preventing pollution / low carbon footprint.
- Top quality accessories - watertight rubber seals for pipe connection (EN 681-1); corrosion resistant steps.

ULTRA-MODERN INSPECTION CHAMBERS WITH THE WIDEST RANGE

ASTRAL P.E. MANHOLE & INSPECTION CHAMBERS

Astral introduces the best underground drainage system which connects SWR system to the main drains, public sewer or sewage treatment plant. It's a complete solution for building drainage and sewerage application. Astral has designed and developed this ultra-modern system with a view to cater to highly sophisticated building drainage requirements.

ASTRAL UNDERGROUND DRAINAGE SYSTEM AVAILABLE SIZES WITH OPTIONS OF INLET AND OUTLET.

SIZES MM	INLET MM	OUTLET MM	COVER MM	PERSON ENTRY
315	110	110	315	NO
450	110-160	110-160	450	NO
500	110-160	110-160	500	NO
600	110-250	110-250	600	NO
800	110-250	110-250	600	YES
1000	110-315	110-315	600	YES

ASTRAL 500, 600, 800 & 1000 MM MANHOLE ARE AVAILABLE IN 5 INLET BASE & 3 INLET BASE OPTIONS.



ASTRAL UNDERGROUND INSPECTION CHAMBER & MANHOLE INVERT DEPTH

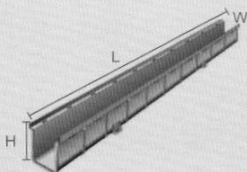
SINGLE PIECE	SIZE OF CHAMBER & MANHOLE	HEIGHT	Inlet's	Outlet
	500 mm DIA - 5 INLET	500MM 750MM 1000MM	110/160	110/160
	600 mm DIA - 5 INLET	500MM 750MM 1000MM 1250MM 2000MM	110/160	110/160
	600 mm DIA - 3 INLET	500MM 750MM 1000MM 1250MM 2000MM	160/200/250	160/200/250
	800 mm DIA - 5 INLET	1000MM 1250MM 1500MM	110/160	110/160
	800 mm DIA - 3 INLET	1250MM 1500MM 1750MM	160/200/250	160/200/250
	1000 mm DIA - 5 INLET	1250MM 1500MM 1750MM	110/160/200	110/160/200
	1000 mm DIA - 3 INLET	1250MM 1500MM 1750MM	200/250/315	200/250/315
1000 mm DIA MANHOLE MODULAR				
BASE UNIT - 3 INLET		650MM	200/250/315	200/250/315
BASE UNIT - 5 INLET		650MM	110/160/200	110/160/200
RAISER UNIT		500MM 750MM 1000MM	Invert depth = base + raiser + upper unit	
UPPER UNIT		1100MM 1350MM 1600MM		
FLAT BASE				
FLAT BASE - 500 mm		450MM 700MM 950MM	---	---
FLAT BASE - 600 mm		450MM 700MM 950MM	---	---
Gully Trap				
GULLY TRAP - 110 mm		405MM	---	110 mm

SURFACE CHANNELS

NEW ARRIVALS

CSA100

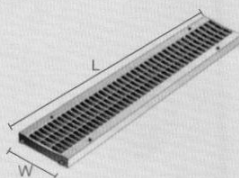
PVC CHANNEL



L	W	H
1000	100	100

SGR100G

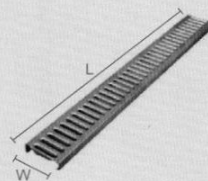
PVC GRID



L	W
500	100

GSZ10999

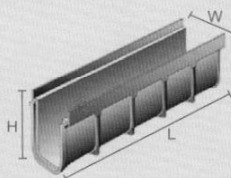
GALVANIZED GRID A15



L	W
1000	100

CSA130

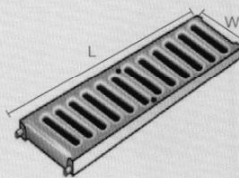
PVC CHANNEL



L	W	H
500	130	150

CGRN130G

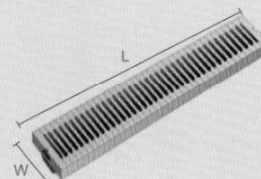
PVC REINFORCED GRID



L	W
500	130

MG13999G

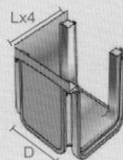
MULTIGRIL GRID



L	W
1000	130

RAC100

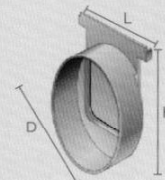
FOUR WAY UNION FOR CHANNEL



L	W	H
1000	100	100

TCA100

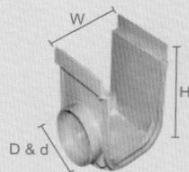
END SOCKET PRATIKO



L	W	H
100	130	110

CAGS130

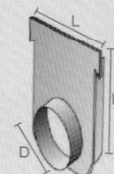
OUTLET SOCKET PRATIKO



L	W	D x 3	d x 3
130	170	80	75

TCA131

END SOCKET PRATIKO

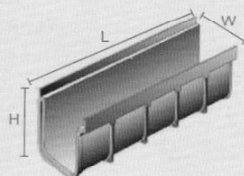


L	D	H
130	130	145

SURFACE CHANNELS

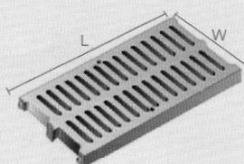
NEW ARRIVALS

CSA200 PVC DRAINAGE CHANNEL



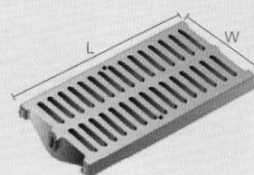
L	W	H
500	200	175

CGRN20LG LIGHT PVC GRID



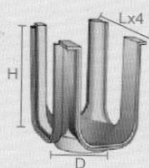
L	W
500	200

CGRN20SG REINFORCED PVC GRID



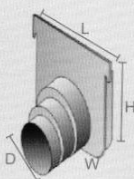
L	W
500	200

RCA130 FOUR WAY UNION FOR HIGH CHANNEL



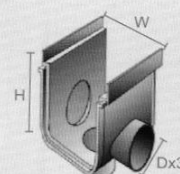
Lx4	H	D
130	145	90-110

TCA200 END SOCKET PRATIKO



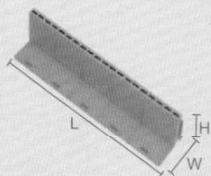
L	D	W	H
200	100-110-125	115	180

CAGS200 OUTLET SOCKET PRATIKO



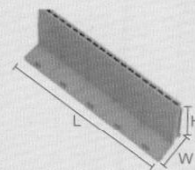
W	H	Dx3
200	200	125

PCF1090G SLOTTED GRID PVC A15



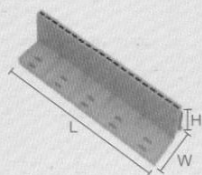
L	W	H
500	100	90

PCF1014G SLOTTED GRID PVC B125



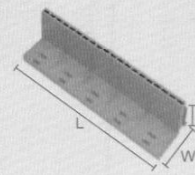
L	W	H
500	100	140

PCF1390G PVC SLOTTED GRID



L	W	H
500	130	90

PCF1314G PVC SLOTTED GRID



L	D	H
500	130	140

PRODUCT RANGE

ASTRAL
CPVC PRO®

ADVANCED HOT AND COLD WATER PLUMBING SYSTEM

**ADVANCED HOT AND COLD WATER
PLUMBING SYSTEM**



ONLY THESE PRODUCTS BEARING THE ABOVE MARKS ARE CERTIFIED

ASTRAL
Aquarius®
STANDARDS REDEFINED
UPVC PLUMBING SYSTEM FOR OUTER LOOP LINES

**LEAD FREE UPVC SOLVENT WELD
PLUMBING SYSTEM**



ASTRAL
Clamps & Hangers

SUPPORT SYSTEM FOR PIPES AND FITTINGS

**FOR PROVIDING PROPER
SUPPORT TO PIPES AND CABLES**



ASTRAL
AquaSAFE®

**UPVC PIPES FOR AGRICULTURE
& WATER TRANSPORT SYSTEM**



ASTRAL
SILENCIO®
High Density Low Noise System

**THE COMPLETE
LOW NOISE SYSTEM**



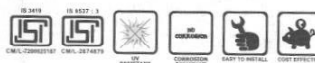
ASTRAL
BORE-WELL
LEAD FREE UPVC COLUMN PIPES

**HEAVY METAL & LEAD FREE
COLUMN PIPES FOR SUBMERSIBLE PUMP**



ASTRAL
Wire Guard®
Conduit Pipes & Fittings

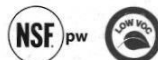
**CONDUIT PIPES FOR PROTECTION
OF WIRES AND CABLES**

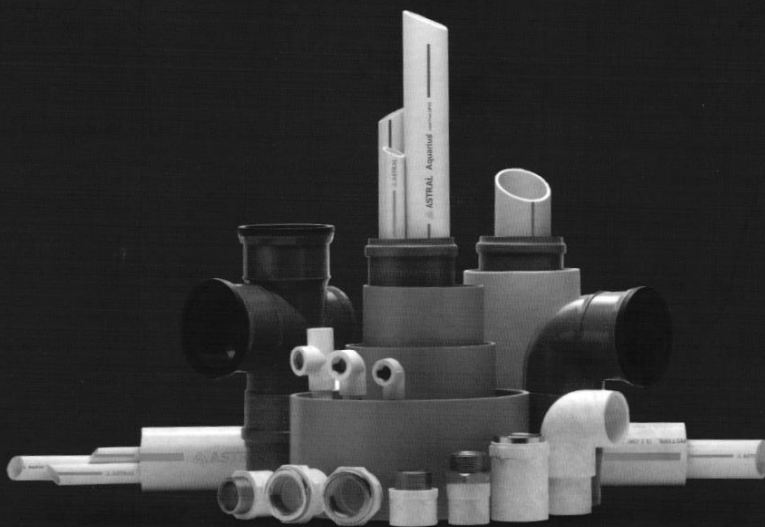


WELD-ON®

Under license of: **IPS**
CORPORATION

**CPVC & UPVC CEMENTS & PRIMER
FOR LEAKAGE FREE PLUMBING**





COMPLETE PLUMBING & DRAINAGE SOLUTIONS™



Registered & Corporate Office : Astral Poly Technik Ltd.
207/1, Astral House, B/h Rajpath Club, Off S. G. Highway, Ahmedabad - 380059.
Ph: 079 6621 2000 | Fax: 079 6621 2121 | Website: www.astralpipes.com

For Export Enquiries: export@astralpipes.com

Branch Offices: MUMBAI : 022 - 2838 9744 • PUNE : 020 - 6521 4455 • NEW DELHI : 011 - 2616 9461
• BENGALURU : 080 - 2661 7236 • HYDERABAD : 040 - 2790 0023 • CHENNAI : 044 - 4350 6384
• JAIPUR : 0141 - 297 4322 • LUCKNOW : 0522 - 272 8844 • KOCHI : 0484 - 332 8156



ASTRAL TOLL FREE
1800 233 7957
Please get in touch with us
between 10 a.m. to 6 p.m.

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