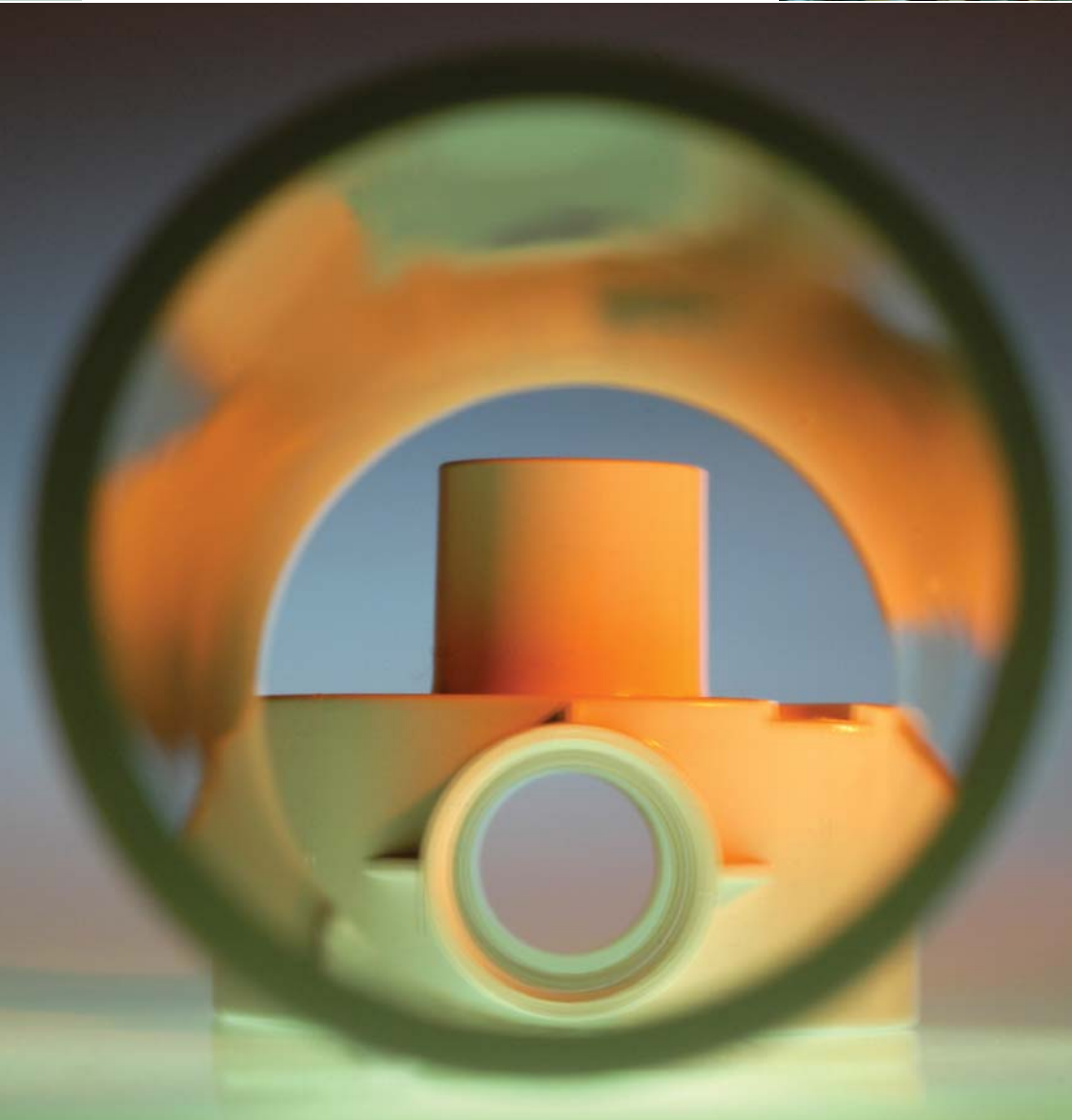


PVC-U CONDUIT SYSTEMS

Conduit and fittings are manufactured from Super High Impact PVC-U.

- Large range of compatible fittings.
- All boxes have brass inserts.
- Withstands the most hazardous site conditions.
- Non-flame propagating.
- Lightweight.
- Exceeds stringent British and European Standard requirements.

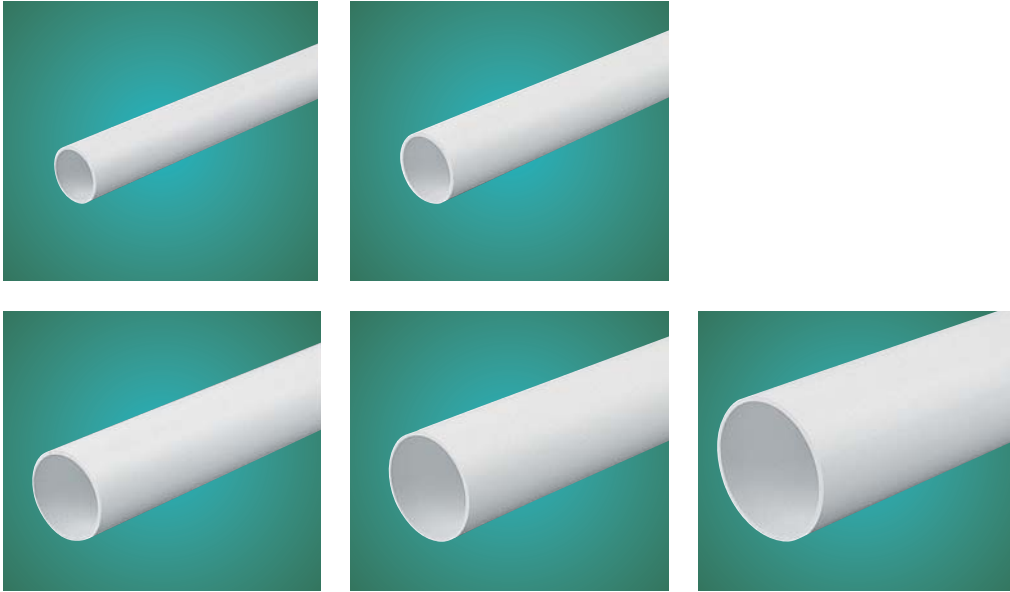
For LSOH Conduit see MT Supertube on pages 136-139.



Section Contents	Pages
Round Conduit	119
Round Conduit Fittings	120-124
Round Conduit Accessories	125
Round Conduit Accessory Boxes	126-127
Oval Conduit	128
Flexible Conduit	129
Corrugated Conduit	129
Cable Covers	129



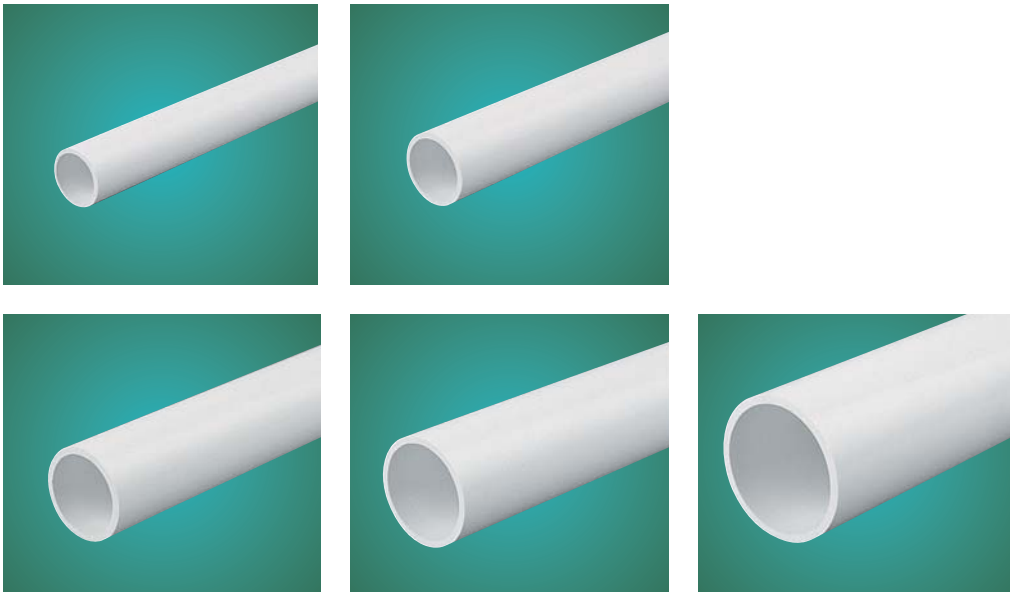
ROUND CONDUIT



Light Gauge – White or black

Prod Code	O.D.	Pack
CR2WH	20mm	30 x 3m
CR3WH	25mm	30 x 3m
CR4WH	32mm	10 x 3m
CR9WH	38mm	10 x 3m
CR10WH	50mm	10 x 3m

For black replace the last two letters of the code with BK.



Heavy Gauge – White or black

Prod Code	O.D.	Pack
CR6WH	20mm	30 x 3m
CR7WH	25mm	30 x 3m
CR8WH	32mm	10 x 3m
CR11WH	38mm	10 x 3m
CR12WH	50mm	10 x 3m

For black replace the last two letters of the code with BK.

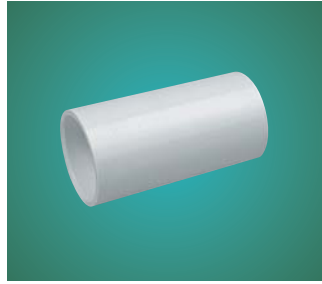
Colour Code Suffix	
Please replace the last two letters with those detailed below.	
Code	Colour
WH	White
BK	Black



ROUND CONDUIT FITTINGS

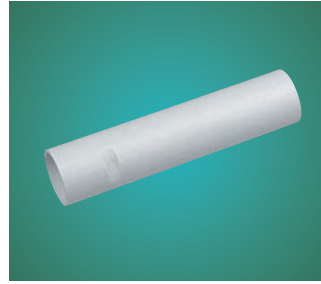
CONDUIT FITTINGS

Available in white (WH) or black (BK).



Straight Couplers

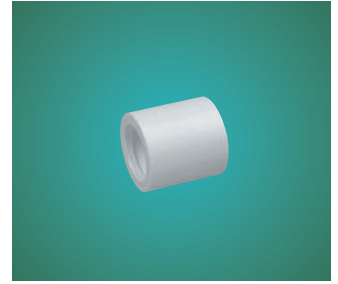
Prod Code	Size	Pack
MC2WH	20mm	100
MC3WH	25mm	50
MC4WH	32mm	25
MC5WH	38mm	10
MC6WH	50mm	10



Expansion Couplers

Prod Code	Size	Pack
MEC2WH	20mm	25
MEC3WH	25mm	10
MEC4WH	32mm	10
MEC5WH	38mm	10
MEC6WH	50mm	5

Should be fitted over a clear gap between two round rigid conduits. Use lubricant sealant in expansion side.



Reducers

Prod Code	Size	Pack
MR1WH	20 x 16mm	50
MR2WH	25 x 20mm	50



Inspection Elbows

Prod Code	Size	Pack
MIE2WH	20mm	20

For 25mm size use Inspection Bend



Inspection Bends

Prod Code	Size	Pack
MIB2WH	20mm	20
MIB3WH	25mm	20



Inspection Tees

Prod Code	Size	Pack
MIT2WH	20mm	20
MIT3WH	25mm	20



Plain Bends

Prod Code	Size	Pack
MNB2WH	20mm	25
MNB3WH	25mm	10
MNB4WH*	32mm	20
MNB5WH*	38mm	5
MNB6WH*	50mm	2

*Couplers required.



Plastic Plugs

Prod Code	Size	Pack
MPP2	20mm H.G.	100
MPP3	25mm H.G.	100
MPP4	32mm H.G.	50
MPP5	38mm H.G.	50
MPP6	50mm H.G.	50



ROUND CONDUIT FITTINGS continued

Available in white (WH) or black (BK).



Adaptors (Female Thread)

Prod Code	Size	Pack
MAB2WH	20mm	100
MAB3WH	25mm	50
MAB4WH	32mm	25
MAB5WH	38mm	15
MAB6WH	50mm	10



Adaptors (Male Thread)

Prod Code	Size	Pack
MA7WH	20mm	100
MA8WH	25mm	50



Adaptors (Clip-in Spout)

Prod Code	Size	Pack
MCA2WH	20mm	100
MCA3WH	25mm	50



Male Bushes

Prod Code	Size	Pack
MMB2WH	20mm	100
MMB3WH	25mm	100
MMB4WH	32mm	25
MMB5WH	38mm	10
MMB6WH	50mm	10



Threaded Lockrings

Prod Code	Size	Pack
MLR2WH	20mm	100
MLR3WH	25mm	50



Locknuts (for use with Cable Glands)

Prod Code	Size	Pack
MLN2WH	20mm	100
MLN3WH	25mm	25
MLN4WH	32mm	10



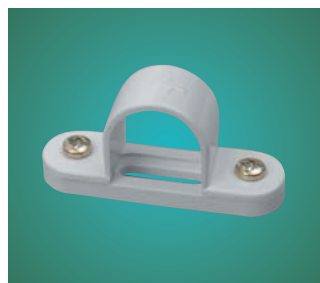
Round 'U' Clips

Prod Code	Size	Pack
MMC2WH	20mm	100
MMC3WH	25mm	50
MMC4WH	32mm	25



Strap Saddles

Prod Code	Size	Pack
MSS2WH	20mm	100
MSS3WH	25mm	100
MSS4WH	32mm	50
MSS5WH	38mm	25
MSS6WH	50mm	25



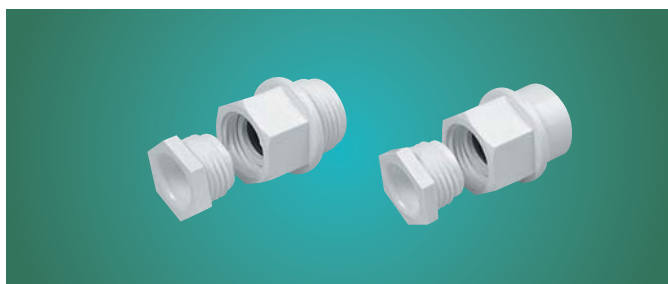
Spacer Bar Saddles

Prod Code	Size	Pack
MSB2WH	20mm	100
MSB3WH	25mm	100
MSB4WH	32mm	50
MSB5WH	38mm	10
MSB6WH	50mm	10



Spacer Bar Snap Saddle

Prod Code	Size	Pack
MSBS2WH	20mm	100



Cable Glands

Prod Code	Conduit Size	Cable Size	Pack
MCG2WH	20mm	ø7-10.5mm	100
MCG2AWH	20mm	ø4-7mm	25
MCGP2WH	20mm (plain body)	ø7-10.5mm	25
MCGP2AWH	20mm (plain body)	ø4-7mm	25
MCG3WH	25mm	ø8-13mm	25
MCG3AWH	25mm	ø12-18mm	25
MCG4WH	32mm	ø18-24mm	10

Colour Code Suffix
Please replace the last two letters with those detailed below.

Code	Colour
WH	White
BK	Black



ROUND CONDUIT FITTINGS continued

PLAIN BORED CIRCULAR BOXES

Available in white or black. Fixing centres 50.8mm fitted with M4 brass inserts. Provision for brass earthing terminals. Boxes meet requirements of BS EN 50086 and BS4607 where applicable and the requirements of the BS7671 Wiring Regulations. They are suitable for suspending a load of up to 3kg centrally at 60°C maximum.



Loop-in Boxes

Prod Code	Size	Pack
0MRB12WH	Plain	20
2MRB12WH	4 x ø20mm KO	20
3MRB12WH	2 x ø25mm KO	20



Terminal

Prod Code	Size	Pack
2MRB2WH	20mm	20
3MRB2WH	25mm	20



Through

Prod Code	Size	Pack
2MRB3WH	20mm	20
3MRB3WH	25mm	20



Angle

Prod Code	Size	Pack
2MRB4WH	20mm	20
3MRB4WH	25mm	20



Tee

Prod Code	Size	Pack
2MRB5WH	20mm	20
3MRB5WH	25mm	20



4-Way

Prod Code	Size	Pack
2MRB6WH	20mm	20
3MRB6WH	25mm	10



Branch 2-Way or U

Prod Code	Size	Pack
2MRB13WH	20mm	20
3MRB13WH	25mm	20



Branch 3-Way or Y

Prod Code	Size	Pack
2MRB14WH	20mm	20
3MRB14WH	25mm	20



Twin Through Way or H

Prod Code	Size	Pack
2MRB15WH	20mm	20
3MRB15WH	25mm	10



Back Outlet

Prod Code	Size	Pack
2MRB1WH	20mm	20
3MRB1WH	25mm	10



Terminal/Back Outlet

Prod Code	Size	Pack
2MRB7WH	20mm	20
3MRB7WH	25mm	10



Through/Back Outlet

Prod Code	Size	Pack
2MRB8WH	20mm	20
3MRB8WH	25mm	10



Angle/Back Outlet

Prod Code	Size	Pack
2MRB9WH	20mm	20
3MRB9WH	25mm	10



Tee/Back Outlet

Prod Code	Size	Pack
2MRB10WH	20mm	20
3MRB10WH	25mm	10



4-Way/Back Outlet

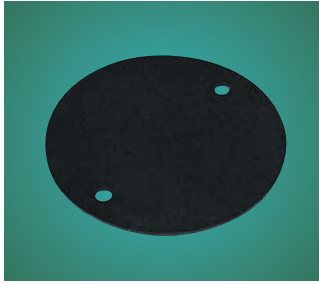
Prod Code	Size	Pack
2MRB11WH	20mm	20
3MRB11WH	25mm	10



ROUND CONDUIT FITTINGS continued

CIRCULAR BOX FITTINGS

Available in white (WH) or black (BK).



Circular Rubber Gasket (Black only)

Prod Code	Size	Pack
MRG1BK	66mm diam	100



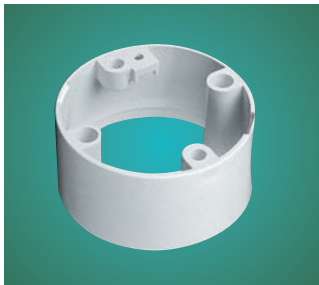
Circular Lids

Prod Code	Size	Pack
MCL1WH	Flush fitting (65mm diam)	100
MCL2WH	Overlapping (85mm diam)	100



Brass Earthing Terminals

Prod Code	Rating	Pack
MET1	15 Amp	100



Circular Extension Rings

Prod Code	Size	Pack
MER1WH	12mm	20
MER2WH	20mm	20
MER3WH	25mm	20
MER4WH	32mm	20
MER5WH	38mm	10

Circular Extension Rings have two lugs fitted with M4 brass inserts and two plain bored lugs.

Colour Code Suffix	
Please replace the last two letters with those detailed below.	
Code	Colour
WH	White
BK	Black



ROUND CONDUIT FITTINGS continued

SQUARE ADAPTABLE CONDUIT BOXES

Available in white or black 32mm and 38mm entries – internal box size 75 x 75 x 60mm.



Terminal

Prod Code	Size	Pack
4SJB1WH	32mm	1
5SJB1WH	38mm	1



Through

Prod Code	Size	Pack
4SJB2WH	32mm	1
5SJB2WH	38mm	1



Angle

Prod Code	Size	Pack
4SJB3WH	32mm	1
5SJB3WH	38mm	1



Tee

Prod Code	Size	Pack
4SJB4WH	32mm	1
5SJB4WH	38mm	1



Four-way

Prod Code	Size	Pack
4SJB5WH	32mm	1
5SJB5WH	38mm	1

Colour Code Suffix

Please replace the last two letters with those detailed below.

Code	Colour
WH	White
BK	Black



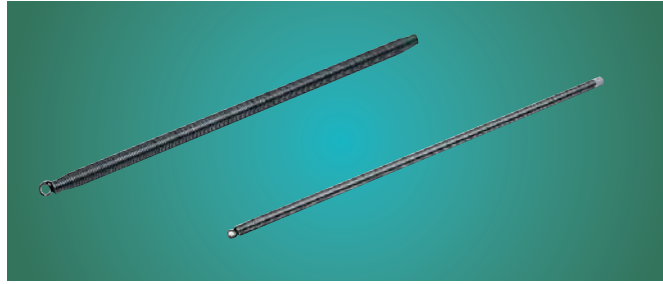
ROUND CONDUIT ACCESSORIES

CONDUIT ACCESSORIES



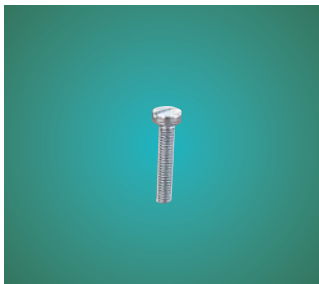
Nylon Draw Tape

Prod Code	Pack
MDT10	1 x 10m
MDT20	1 x 20m
MDT30	1 x 30m



Bending Springs

Prod Code: Heavy Gauge (Green end)	Light Gauge (White end)	Conduit Size	Pack
MBSH2	MBSL2	20mm	1
MBSH3	MBSL3	25mm	1
MBSH4	MBSL4	32mm	1
MBSH5	MBSL5	38mm	1
MBSH6	MBSL6	50mm	1



Cheese Head Screws

Prod Code	Pack
M4 x 8mm	200
M4 x 12mm	200
M4 x 20mm	100
M4 x 25mm	100



Lubricant Sealant

Prod Code	Pack
MSC1	1 x 100gm



*Conduit Solvent Cement

Prod Code	Pack
MSC20	1 x 250ml

*Child resistant lid



*Trunking Solvent Adhesive

Prod Code	Pack
MSC3	1 x 250ml

*Child resistant lid

IN ACCORDANCE WITH COSHH REGULATIONS DETAILS OF OUR SOLVENTS ARE ENTERED IN THE NATIONAL POISON CENTRE COMPUTER RECORDS. HEALTH AND SAFETY DATA SHEETS ARE ALSO AVAILABLE ON THE MARSHALL-TUFFLEX WEB SITE, www.marshall-tufflex.com



ROUND CONDUIT ACCESSORY BOXES

All boxes have brass inserts and provision for earth terminal which is separately available.

Dimensions Fixing Centre

Single Gang	87 x 87mm	60.3mm
Twin Gang	147 x 87mm	120.6mm

To the requirements of BS 4662.

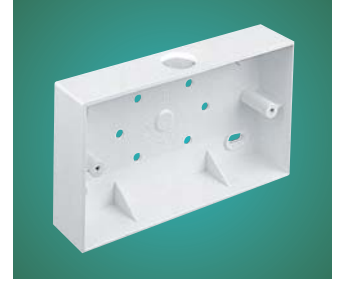
Standard colour – white.
Coloured boxes, including red for Fire Alarm Installations, are available to order in production quantities.
Boxes with suffix 'K' have $\varnothing 20\text{mm}$ K.O. in centre top for surface entry. MSSB10KWH and MSSB11KWH have a moulded $\varnothing 20\text{mm}$ hole.
Alternative K.O. configurations are available to order.

SURFACE MOUNTED ACCESSORY BOXES – SQUARE CORNERS



Single Gang – Square

Prod Code	Depth	Pack
MSSB10KWH	32mm	20



Twin Gang – Square

Prod Code	Depth	Pack
MSSB11KWH	32mm	10



Single Gang – Square

Prod Code	Depth	Pack
MSSB17KWH	44mm	10



Twin Gang – Square

Prod Code	Depth	Pack
MSSB23KWH	44mm	5

FOR PLAIN ACCESSORY BOXES SEE PAGES 131 TO 132

SURFACE MOUNTED ACCESSORY BOXES – RADIUS CORNERS



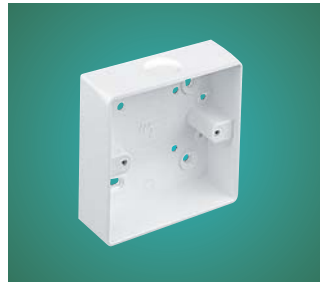
Single Gang – Radius

Prod Code	Depth	Pack
MSSB46KWH	28mm	20



Twin Gang – Radius

Prod Code	Depth	Pack
MSSB48KWH	28mm	10



Single Gang – Radius

Prod Code	Depth	Pack
MSSB19KWH	32mm	20



Twin Gang – Radius

Prod Code	Depth	Pack
MSSB21KWH	32mm	10



Single Gang – Radius

Prod Code	Depth	Pack
MSSB4WH	35mm	20



Single Gang – Radius

Prod Code	Depth	Pack
MSSB40KWH	44mm	10



Twin Gang – Radius

Prod Code	Depth	Pack
MSSB41KWH	44mm	5



ROUND CONDUIT ACCESSORY BOXES continued

FLUSH MOUNTED ACCESSORY BOXES WITH RADIUS CORNERS

All boxes have brass inserts and provision for earth terminal which is separately available.

Dimensions Fixing Centre

Single Gang	74 x 74mm	60.3mm
Twin Gang	134 x 74mm	120.6mm

To the requirements of BS 4662.



Single Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB25WH	25mm	20

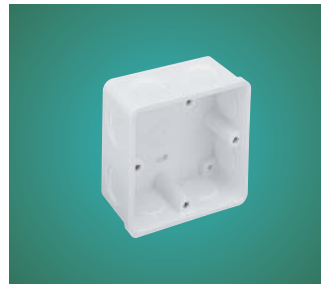
Entries: 2 x \varnothing 20mm on each of 3 sides.



Single Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB1WH	35mm	12

Entries: 2 x \varnothing 20mm on each of 4 sides.



Single Gang – Fixed Lug

Prod Code	Depth	Pack
MSSB2WH	35mm	12

Entries: 2 x \varnothing 20mm on each of 4 sides.



Twin Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB3WH	35mm	6

Entries: 4 x \varnothing 20mm on horizontal sides, 2 x \varnothing 20mm on vertical sides.



Single Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB47WH	47mm	10

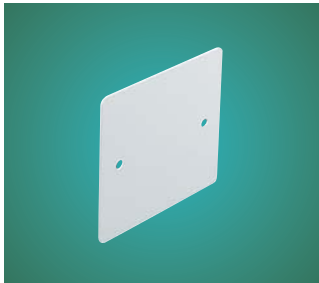
Entries: 2 x \varnothing 20mm on each of 4 sides.



Flush Mounted Single Gang Cover – Clip-on

Prod Code	Depth	Pack
MSCP1WH	5.3mm	20

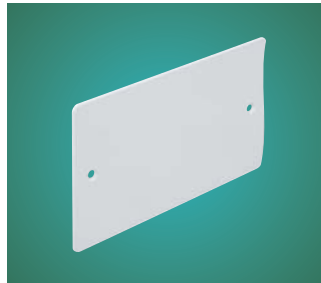
Size: 78 x 78mm O/A.



Single Gang – Radius

Prod Code	Depth	Pack
MSCP2WH	2mm	20

Size: 86 x 86mm O/A.



Twin Gang – Radius

Prod Code	Depth	Pack
MSCP3WH	2mm	10

Size: 86 x 146mm O/A.

COVER PLATES



Brass Earthing Terminals

Prod Code	Rating	Pack
MET1	15 Amp	100



Single Gang – Raised

Prod Code	Depth	Pack
MSSP10WH	9mm	10

Size: 85 x 85mm O/A.



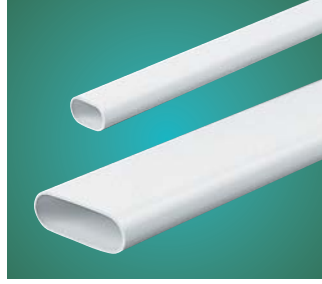
Twin Gang – Raised

Prod Code	Depth	Pack
MSSP20WH	9mm	2

Size: 85 x 145mm O/A.



OVAL CONDUIT



Oval Conduit Extra Super High Impact (White)

Prod Code	O.D.	Dimensions	Pack
EC016WH	13mm	13 x 8mm	50 x 3m
EC017WH	16mm	16 x 10mm	50 x 3m
EC018WH	20mm	23 x 11mm	50 x 3m
EC019WH	25mm	29 x 11mm	20 x 3m
EC020WH	32mm	32 x 11mm	20 x 3m



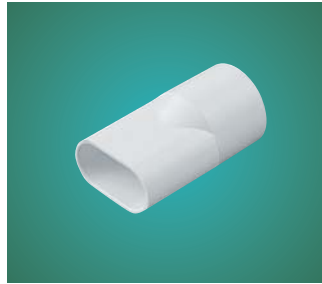
Oval Strap Saddle (White)

Prod Code	Size	Pack
MOCSS20WH	20mm	50
MOCSS25WH	25mm	50



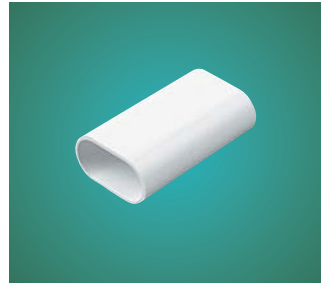
Oval Clips (White)

Prod Code	Size	Pack
MOC1WH	13mm	100
MOC2WH	16mm	100
MOC3WH	20mm	100
MOC4WH	25mm	100
MOC5WH	32mm	100



Oval to Round Adaptors (White)

Prod Code	Size	Pack
MOR2WH	20mm oval/ ø20mm	50



Oval Connector (White)

Prod Code	Size	Pack
MOC20WH	20mm	25
MOC25WH	25mm	25



Oval Bush (White)

Prod Code	Size	Pack
MOCB20WH	20mm	25
MOCB25WH	25mm	25

FLUSH MOUNTED ACCESSORY BOXES



Single Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB6WH	16mm	20

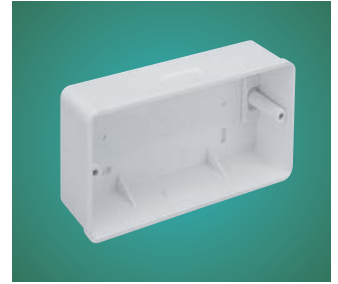
Entries: 2 x 16mm oval for EC017,
1 x 20mm oval for EC018.
Size: 74 x 74mm O/A.



Single Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB150WH	35mm	12

Entries: 1 x 20mm oval for EC018,
1 x 25mm oval for EC019.
Size: 74 x 74mm O/A.



Twin Gang – Adjustable Lug

Prod Code	Depth	Pack
MSSB350WH	35mm	6

Entries: 1 x 20mm oval for EC018,
1 x 25mm oval for EC019.
Size: 74 x 134.3mm O/A.

SURFACE MOUNTED ACCESSORY BOXES



Single Gang – Radius Corners

Prod Code	Depth	Pack
MSSB7WH	19mm	20

Entries: 1 x 16mm oval in top
for surface entry.
Size: 87 x 87mm O/A.



Single Gang – Square Corners

Prod Code	Depth	Pack
MSSB12WH	25mm	20

Entries: 2 x 16mm oval in top
for surface entry.
Size: 87 x 87mm O/A.



FLEXIBLE CONDUIT



Flexible Conduit (Black)

Prod Code	Size mm	Pack
TF25BK	20 OD x 15.4 ID	1 x 5m
TF225BK	20 OD x 15.4 ID	1 x 25m
TF35BK	25 OD x 20.1 ID	1 x 5m
TF325BK	25 OD x 20.1 ID	1 x 25m



Straight Adaptors (Black)

Prod Code	Size	Thread Size	Pack
TFSA2BK	20mm	M20 x 1.5	25
TFSA3BK	25mm	M25 x 1.5	25



Elbows (Black)

Prod Code	Size	Thread Size	Pack
TFEA2BK	20mm	M20 x 1.5	10
TFEA3BK	25mm	M25 x 1.5	10

FLAME RETARDANT NYLON FLEXIBLE CONDUIT

Manufactured from Flame Retardant Nylon UL 94 V0-Rated. Working Temperature: -10°C to +120°C. Colour : Black



Tees (Black)

Prod Code	Size	Pack
TFIT2BK	20mm	5
TFIT3BK	25mm	5



Sealing Washers (Black)

Prod Code	Size	Pack
TFS2BK	20mm	50
TFS3BK	25mm	50

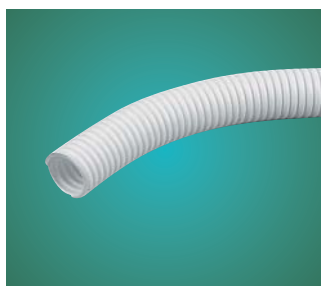
For straight Adaptors and Elbows giving the connection an IP66 rating.



Threaded Lockrings (PVC-U) (Black)

Prod Code	Size	Pack
MLR2BK	ø20mm	100
MLR3BK	ø25mm	50

CORRUGATED CONDUIT



PVC Corrugated Conduit (White)

Prod Code	O.D.	Pack
MCC2WH	20mm	1 x 50m
MCC3WH	25mm	1 x 50m



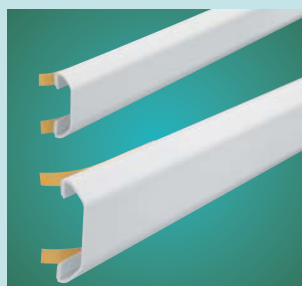
Straight Adaptors

(in Nylon above, Black or white)

Prod Code	Size	Pack
TFSA2WH	20mm	25
TFSA3WH	25mm	25

Standard adaptors, couplers and saddles as listed on pages 120 and 121 may be used with corrugated conduit.

CABLE COVERS



Self Fixing Cable Cover (White)

Prod Code	Size	Pack
14000SFHW	29.5 x 10mm	10 x 3m
14010SFHW	41.5 x 12.5mm	10 x 3m

For improved appearance and security to surface cables.



Channels (White)

Prod Code	Size	Pack
ECC21WH	13 x 8mm	50 x 2m
ECC22WH	25 x 9mm	50 x 2m
ECC23WH	38 x 9mm	50 x 2m

CONDUIT AND CHANNEL TECHNICAL INFORMATION

The following notes are intended to be a guide to the installation of Marshall-Tufflex PVC-U conduit and fittings. For further advice contact our Technical Hotline 01424 443348.

CHOICE CONDUIT/CHANNEL

The choice is dependent on the type of work being undertaken and the specification. Heavy gauge round conduit is normally used in surface work and for casting in-situ. Light gauge round conduit is suitable for concealed work and in screeds. Oval conduit is normally chosen for use in plastered walls and can be used as switch drops in surface work. The channel sections are frequently used as an inexpensive method of installing cables in domestic installations beneath plaster. See Material Data page 200 for Thermal Properties.

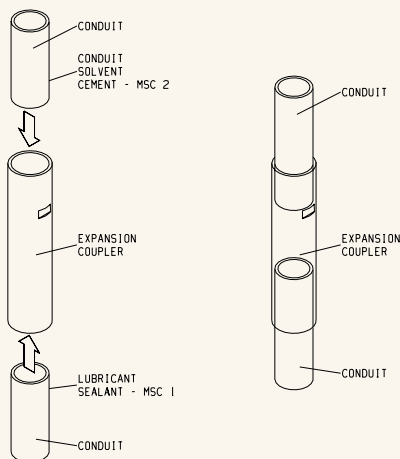
SURFACE INSTALLATION

All horizontal runs of conduit should be secured at a maximum distance of 0.9m and vertical runs should be secured at a maximum of 1.2m. For high ambient temperatures or where rapid changes in temperature are likely to be encountered this distance should be reduced. At fittings or where directional changes takes place the conduit should be fastened approximately 150mm either side to maintain support. The fastenings should not be over tightened to permit thermal movement of the conduit.

JOINTS AND COUPLERS

To accommodate for thermal movement due to temperature change (Materials Data) on surface installations, it is recommended that expansion couplings be used at a maximum distance of 6m intervals. Where high ambient temperatures or frequent variations in temperature are likely to occur this distance should be reduced.

Expansion couplers are installed with the short side coated with solvent cement (MSC2) and the coupler pushed firmly over the conduit down to the shoulder. The slip side coated inside with lubricant sealant (MSC1) receives the conduit to a midpoint to the nib. This will then permit for expansion or contraction providing the conduit is free to move in the saddles.



Conduit fittings are installed in the system using solvent cement (MSC2) for permanent installations and lubricant sealant (MSC1) where the installation is subject to frequent changes.

BENDS

Note: Care should be taken not to make too tight a bend and attention is drawn to BS7671 1992 (Wiring Regulations) 522-08-03. The radius of every bend in a wiring system shall be such that conductors and cables shall not suffer damage.

COLD BENDING 20-25MM CONDUIT

This may be carried out on all conduit sizes up to 25mm in diameter using the correct size and gauge of bending spring. It should be noted that the heavy gauge spring is colour banded green and the light gauge spring colour banded white near the tip of the spring. These springs are not interchangeable under any circumstances. Make sure they are not damaged in any way as this can cause the conduit to kink and fracture making removal of the spring difficult. (In cold weather the Conduit should be warmed by rubbing with a rag or some other suitable means before bending.)

To bend the conduit insert the spring to the desired position, grip the conduit on either side of the bend and bring slowly together to form the bend. The bend should be made more acute than necessary because of the tendency of the PVC-U to 'recover' after bending. To remove the spring twist in an anti-clockwise direction which will reduce its diameter. At the same time turn the conduit in a clockwise direction gently pulling the spring and conduit apart. If the spring fails to release during this operation do not pull too hard otherwise damage to the spring may occur. Repeat the removal procedure turning the spring again in an anti-clockwise direction and rotating the conduit clockwise slowly pulling them apart. The conduit should then be fastened into position to prevent further 'recovering' of the bend.

HOT BENDING

This should be carried out on all conduit above 25mm diameter using the correct size and gauge of bending spring. Insert the bending spring into the conduit as previously described, gently heating the conduit with a hot air torch, hot water or by other suitable means, with care being taken to avoid the direct application of a flame to the conduit. When the conduit is in a pliable state, slowly bend around a suitable former, holding in position for about one minute until set when the bending spring may then be removed by twisting in an anti-clockwise direction and gently withdrawing from the conduit.

If the conduit is bent too fast or, particularly in the case of light gauge across the knee, there is a risk of damage to both the conduit and spring. Similarly once the bend has been made it should not be forced backwards but allowed to recover naturally.

EARTHING

The properties of PVC-U make it an all insulated system and the use of a separate earth cable is essential which greatly reduces the risk of poor earth continuity that can result from any breakdown of joints which may occur in a steel system.

JOINT SEALANTS

Lubricant Sealant MSC1. For use with expansion couplers or installations subject to frequent change. Water resistant.

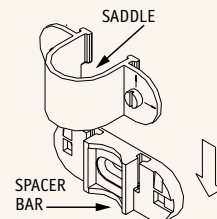
Solvent Cement MSC2. A slow acting solvent cement especially formulated for watertight conduit fittings.

Solvent Adhesive MSC3. A watertight fast acting solvent adhesive mainly for trunking systems with good take-up properties.

Health and Safety Data Sheets are available from our Technical Department.

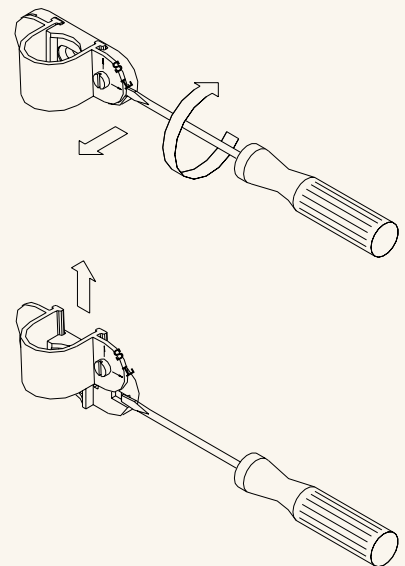
SPACER BAR SNAP SADDLE ASSEMBLY

Slide Saddle into groove until Saddle locks into the Spacer Bar.



DISMANTLE

Insert 4mm blade screwdriver into slot on side. Twist screwdriver which releases the Saddle in the Spacer Bar and slide Saddle out of the Spacer Bar groove.



CONDUIT AND CHANNEL CABLE CAPACITIES

INTRODUCTION

This appendix describes a method which can be used to determine the size of conduit necessary to accommodate cables of the same size, or different sizes, and provides a means of compliance with Regulations, which states 'The number of cables drawn into conduit of a wiring system shall be such that no damage is caused to the cables or to the conduit during their installation.'

The method employs a 'unit system' each cable size being allocated a factor. The sum of all factors for the cables intended to be run in the same conduit is compared against the factors given for conduit in order to determine the size of conduit necessary to accommodate those cables.

It has been found necessary, for conduit, to distinguish between –

1. Straight runs not exceeding 3 metres in length, and
2. Straight runs exceeding 3 metres, or runs of any length incorporating bends or sets.

The term 'bend' signifies a British Standard 90° bend and one double set is equivalent to one bend.

For the case 1, each conduit size is represented by only one factor. For the case 2, each conduit size has a variable factor which is dependent on the length of run and the number of bends or sets. For a particular size of cable the factor allocated to it for case 1 is not the same as for case 2.

Because of certain aspects, such as the assessment of reasonable care of pulling-in, acceptable utilisation of the space available and the dimensional tolerance of cables and conduit, any method of standardising the cable capacities of such enclosures can only give guidance on the number of cables which can be accommodated.

Thus the sizes of conduit determined by the method given in this appendix are those which can be reasonably expected to accommodate the desired number of cables in a particular run using an acceptable pulling force and with the minimum probability of damage to cable insulation.

Only mechanical considerations have been taken into account in determining the factors given in the following tables.

As the number of circuits in a conduit increases, the current-carrying capacities of the cables must be reduced according to the appropriate grouping factors. It may therefore be more attractive economically to divide the circuits concerned between two or more enclosures.

Single-core PVC-insulated cables in straight runs of conduit not exceeding 3 metres in length.

For each cable it is intended to use, obtain the appropriate factor from Table 1A. Add all the cable factors so obtained and compare with the conduit factors given in Table 1B. The conduit size which will satisfactorily accommodate the cables is that size having a factor equal to or exceeding the sum of the cable factors.

TABLE 1A

Cable factors for short straight runs

Type of conductor	Conductor cross-sectional area mm ²	Factor
Solid	1	22
	1.5	27
	2.5	39
Stranded	1.5	31
	2.5	43
	4	58
	6	88
	10	146

TABLE 1B

Conduit factors for short straight runs

Conduit diam mm	Factor
20	460
25	800
32	1400

Single-core PVC-insulated cables in straight runs of conduit exceeding 3 metres in length, or in runs of any length incorporating bends or sets.

For each cable it is intended to use, obtain the appropriate factor from Table 1C. Add all the cable factors so obtained and compare with the conduit factors given in Table 1D, taking into account the length of the run it is intended to use and the number of bends and sets in that run. The conduit size which will satisfactorily accommodate the cables is that size having a factor equal to or exceeding the sum of the cable factors.

TABLE 1C

Cable factors for long straight runs or runs incorporating bends

Type of conductor	Conductor cross-sectional area mm ²	Factor
Solid or Stranded	1	16
	1.5	22
	2.5	30
	4	43
	6	58
	10	105

For MT Supertube increase cable factor by 15%.

TABLE 1D

Conduit factors for runs incorporating bends

Length of run m	Conduit diameter, mm														
	Straight			One bend			Two bends			Three bends			Four bends		
	20	25	32	20	25	32	20	25	32	20	25	32	20	25	32
1	Covered by Tables 1A and 1B			303	543	947	286	514	900	256	463	818	213	388	692
1.5				294	528	923	270	487	857	233	422	750	182	333	600
2				286	514	900	256	463	818	213	388	692	159	292	529
2.5				278	500	878	244	442	783	196	358	643	141	260	474
3				270	487	857	233	422	750	182	333	600			
3.5	290	521	911	263	475	837	222	404	720	169	311	563			
4	286	514	900	256	463	818	213	388	692	159	292	529			
4.5	282	507	889	250	452	800	204	373	667	149	275	500			
5	278	500	878	244	442	783	196	358	643	141	260	474			
6	270	487	857	233	422	750	182	333	600						
7	263	475	837	222	404	720	169	311	563						
8	256	463	818	213	388	692	159	292	529						
9	250	452	800	204	373	667	149	275	500						
10	244	442	783	196	358	643	141	260	474						