

Ordering Guide of the Universal Rack (FIST-UR)



This document provides assistance with the selection of racks for use in FIST applications. It includes the following sections:

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1 Product description

The FIST Universal Rack, FIST-UR, is an all-purpose solid metal rack used to house fiber optic distribution equipment such as Raychem's cable splicing and patching shelves.

It is a 400 mm deep and 2.2 m high rack, available in different widths (see section 2.1).

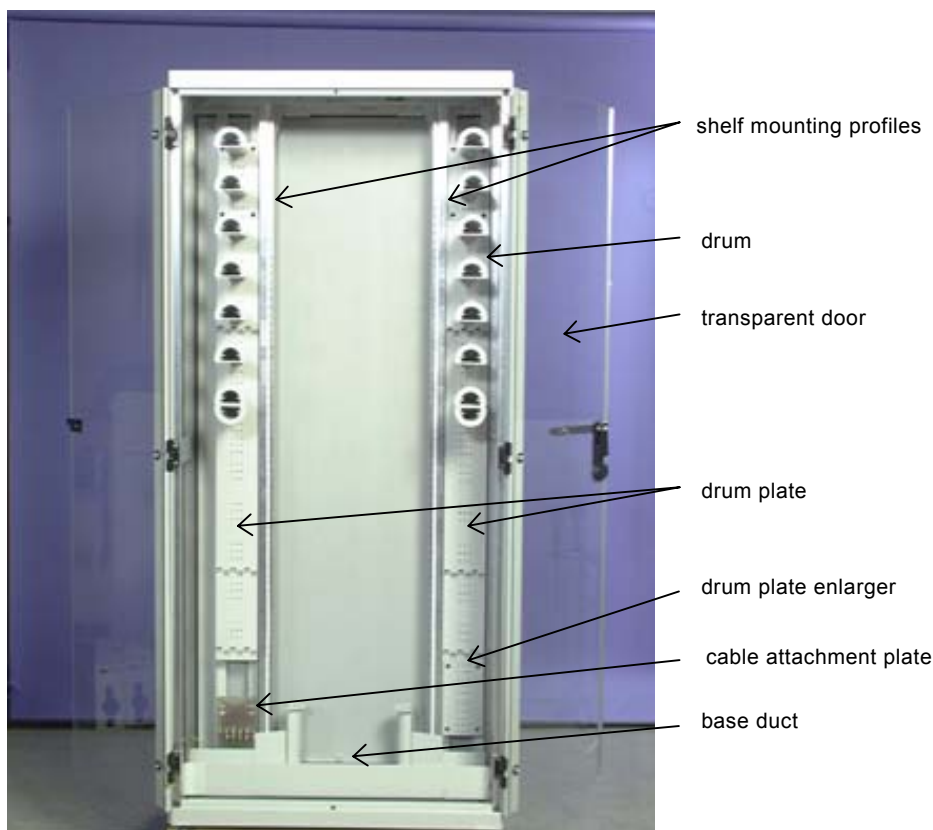
The rack is provided with a unique sliding mechanism for the mounting profiles. This sliding mechanism offers many features. The position of the mounting profiles can be chosen along the width of the rack, offering maximum flexibility

- regarding the number of drum plates left and right from the mounting profiles and
- regarding the subrack dimensions (can easily be adjusted to fit 19", ETSI or 23" shelves).

The mounting profiles are grooved to accommodate T-nuts which are used for mounting the shelves. T-nuts have the advantage over cage nuts that the same set of mounting profiles can be used for 19", ETSI as well as 23" shelf mounting by simply adjusting the distance between those two mounting profiles.

Another advantage is that shelves of different heights can be mounted above each other without unused spacing between those shelves.

The shelf height identification strips on the mounting profiles enable the correct positioning of the shelves.



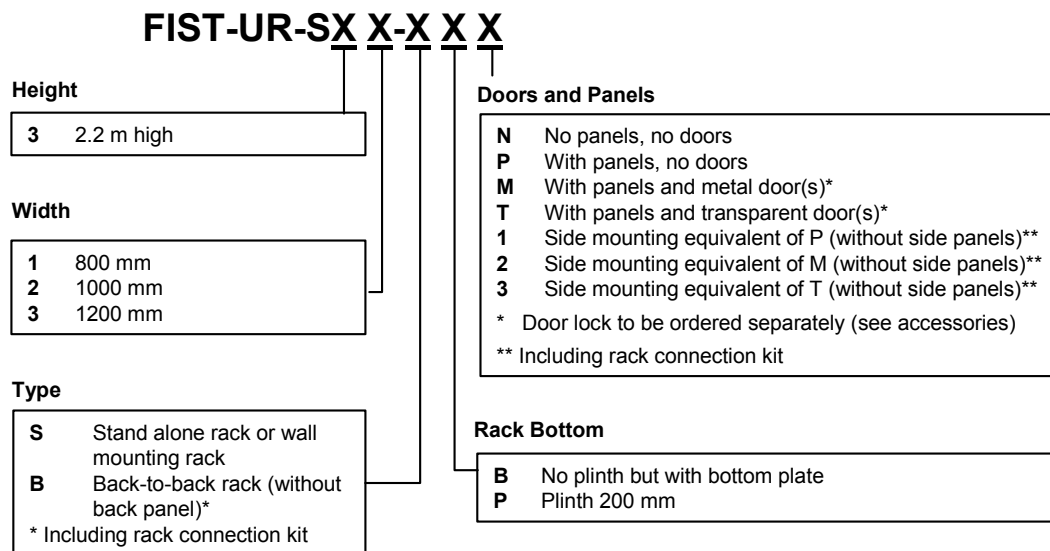
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FIST-UR Universal Rack (1000 mm wide)

2 Ordering information

2.1 Universal rack

Refer to Section 3 for full product descriptions.



Standard rack kit content

- Rack coated to RAL 7035 with supplier logo
- Wall connection kit (plugs, screws)
- Rack connection kit (if applicable)
- Base duct
- Drum plates (1 pc for 800 mm wide rack, 2 pcs for 1000 mm wide rack, 4 pcs for 1200 mm wide rack)
- The following components are pre-installed on the drum plate(s):
 - Drums
 - Cable attachment plate(s) including C-profile, 6 single cable clamps and 6 strength member fixations (1 pc for 800 mm and 1000 mm wide racks, 2 pcs for 1200 mm wide rack)
 - Drum plate enlargers (1 pc for 800 mm wide rack, 3 pcs for 1000 mm wide rack, 6 pcs for 1200 mm wide rack)
- Pack of 100 T-nuts and M6 screws (to mount the shelves)
- Earthing facility which connects the metal parts to each other including a connection point to an external earthing system
- Adjustable feet
- Identification strips on the mounting profiles
- Installation instructions
- Packed in a reinforced box

2.2 Accessories

Accessories are ordered in addition to the basic rack to suit specific applications. Refer to section 3 for a complete product description and pictures.

2.2.1 Rack mounting

Name	Qty/Pk	Description
FIST-UR-FMK	1 set	Floor mounting kit
FIST-UR-RCK	1 set	Extra rack connection kit (side-to-side or back-to-back) (one is included in standard rack kit if applicable)
FIST-UR-PLK	1 pc	Panel lock kit to lock one side panel or back panel.
FIST-UR-EBK	4 pcs	Eye bolts to mount on the top plate of the rack to lift the rack with a crane

2.2.2 Shelf & drum mounting

Name	Qty/Pk	Description
FIST-UR-DPE	1 pc	Drum plate enlarger
FIST-UR-DPCK	1 pc	Drum plate connection kit
FIST-UR-SPL	1 pc	Shelf positioning level
FIST-UR-MBA-IM	1 set	Mounting bracket adapters to mount 19" shelves on ETSI mounting profiles for 125 mm high shelves
FIST-UR-MBA-IJ	1 set	Mounting bracket adapters to mount 19" shelves on 23" mounting profiles for 125 mm high shelves

2.2.3 Cable installation

Name	Qty/Pk	Description
FIST-UR-CAP	1 pc	Extra cable attachment plate with C-profile (*)
FIST-UR-CAA-150-6	1 kit	Cable attachment accessories kit with 6 single cable clamps and 6 strength member fixations (*)
FIST-UR-CAA-150-12	1 kit	Cable attachment accessories kit with 6 double cable clamps and 12 strength member fixations (*)
FIST-UR-UCT-06	6 pc	Extra cable strength member fixations (including 1 Allen key)
FIST-UR-CSGK	1 set	Cable shield grounding kit
FIST-UR-CEMT-I	1 pc	19" cable element management tray and cover
FIST-UR-CEMT-M	1 pc	ETSI cable element management tray and cover
FIST-GS-FLEX-17-50-S5027	50 m	Flexible tubing (ID 17 mm).
FISTV-FTC	10 pc	Clip-on flexible tubing clamps
FISTV-TW-NN-188	100 pc	Tie wrap, standard, not re-openable, 188 mm long.

Note: * Cable attachment accessories are included in the standard rack kit (see page 4).

- Standard racks are equipped for loose-tube cable constructions.
- Cable termination kits are available for other cable constructions (e.g. central core cable, ribbon fiber cable types) - See FIST-GSS2 and FIST-GMS2 ordering guide.

2.2.4 Pigtail management

Name	Qty/Pk	Description
FIST-UR-HPM-I	1 pc	19" HPM (Horizontal Pigtail Management) with 5 drums and cover
FIST-UR-HPM-M	1 pc	ETSI HPM (Horizontal Pigtail Management) with 6 drums and cover
FIST-UR-HPS-I	1 pc	19" HPS (Horizontal Pigtail Storage) with 5 drums and cover
FIST-UR-HPS-M	1 pc	ETSI HPS (Horizontal Pigtail Storage) with 6 drums and cover
FIST-UR-POM-I	1 pc	19" POM (Pigtail Orientation Module) and cover
FIST-UR-POM-M	1 pc	ETSI POM (Pigtail Orientation Module) and cover

2.2.5 Other accessories

Name	Qty/Pk	Description
FIST-UR-DL-XX	1 pc	Door lock with standard key number (XX = 00) or with customer specific key number (XX = 01...05)
FIST-UR-PLINTH-800-200	1 pc	Plinth 800 mm wide, 200 mm high
FIST-UR-PLINTH-1000-200	1 pc	Plinth 1000 mm wide, 200 mm high
FIST-UR-PLINTH-1200-200	1 pc	Plinth 1200 mm wide, 200 mm high
FISTV-E7187-6316	25 m	Velcro roll

2.2.6 Miscellaneous

Name	Qty/Pk	Description
FIST-UR-TNUT-50	50 pc	Extra T-nuts and M6 screws (to mount shelves and the drum plates - included in standard rack kit)
FIST-UR-BOLT-M6	25 pc	Extra M6 screws (to mount drums on the drum plate - drums are pre-mounted in the rack)
FIST-UR-BOLT-M5	25 pc	Extra M5 screws for mounting the doors, the sliding mechanism of the mounting profiles and the earthing wires (these items are pre-mounted in the rack)
FIST-UR-CH	50 pc	Bag of extra Phillips screws for the sliding mechanism of the mounting profiles and for the baseduct (these items are pre-mounted in the rack)

2.3 Tools

Name	Qty/Pk	Description
FACC-ALLEN-KEY-5-350	1 pc	Allen key, diameter 5 mm, length 350 mm for back-mounting of the shelves and for mounting the drums onto the drum plate.
FIST-UR-SD-PH	1 pc	Phillips screw driver, diameter 8 mm, length 150 mm for the sliding mechanism of the mounting profiles and for the base duct.
FACC-ALLEN-KEY-4	10 pc	Allen key for M5 screws for mounting the doors, the sliding mechanism of the mounting profiles and the earthing wires.
FACC-ALLEN-KEY-5	10 pc	Allen key for M6 screws for mounting the drum plates and for use with the wall connection kit and the drum plate connection kit.

3 Product guide

3.1 Rack description

Finish

The rack is colored to RAL 7035 and shows the Raychem logo.

Dimensions

Depth: 400 mm

Height: 2200 mm

Width: as selected in the namestring (section 2.1)

Construction

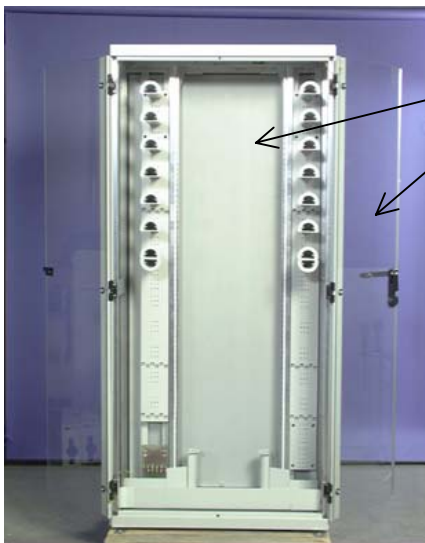
Bottom and top plate

Back plate (not for back-to-back rack type)

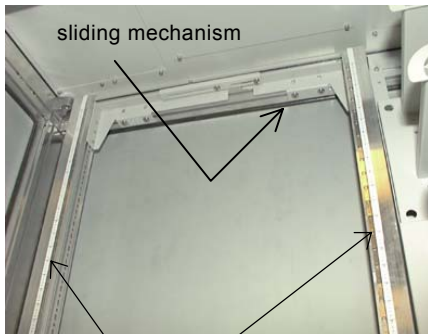
Panels (left and right): as selected in the namestring (section 2.1)

Doors: as selected in the namestring (section 2.1)

options: none
transparent
metal



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UROG038.JPG



UROG043.JPG

Shelf mounting profiles

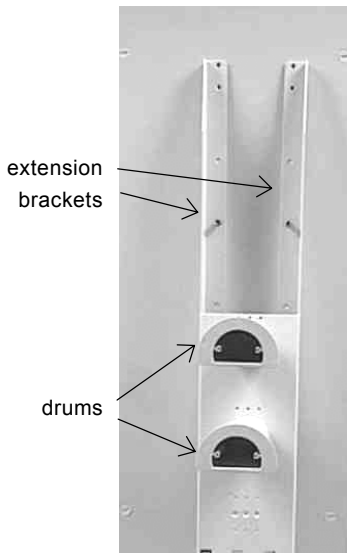
Grooved mounting profiles are provided in the rack onto which the shelves are mounted with T-nuts.

The standard distance between the profiles is to accommodate ETSI shelves, though the sliding mechanism allows easy repositioning of the profiles to accommodate 19" or 23" wide shelves.

Identification labels indicate the correct mounting profile distance (19", ETSI or 23").

The complete shelf mounting frame can be repositioned along the rack width in order to alter the rack configuration (e.g. change drum plates from one side to the other).

The grooved shelf mounting profiles are based on the T-nut concept. Therefore shelves of different heights according to ETSI, 19" or other standards can be mounted one upon another without unused space in between. The shelf height identification strips on the mounting profiles enable the correct positioning of the shelves.



UR-06.JPG

Pre-installed drum plates

Drum plates are pre-installed in the rack. They are used to manage and route cables, pigtails and patchcords between the rack entry ports and the shelves.

Depending on the rack width, a standard number of drum plate(s) is included in the standard rack kit:

<u>rack width</u>	<u># drum plates</u>	<u>standard configuration</u>
800 mm	1	0 left - 1 right
1000 mm	2	1 left - 1 right
1200 mm	4	2 left - 2 right

Drums for patchcord routing are pre-mounted on the drum plates. These allow patchcord overlength storage for intra- or inter-rack patching and overlength storage for outgoing patchcords.



UROG044.JPG

The drum plate has extension brackets at both ends to accommodate either a drum plate enlarger or a cable attachment plate.



UROG009.JPG

Drum plate enlarger

The drum plate enlarger allows the installation of additional drums.



UROG040.JPG

Cable attachment plate

Cables enter the rack through the rack top or bottom openings and both the cable outer jacket and the cable strength members are attached to the cable attachment plate.

6 single cable clamps and 6 strength member attachments are included in the standard rack kit.



UROG041.JPG

Base duct

The bottom of the base frame contains a patchcord duct system that is used to carry patchcords from one rack side to the other, or from one rack to another in a back-to-back or side-to-side configuration

It consists of different modules which can be repositioned along the rack width in accordance with the position of the mounting profiles.



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Earthing facility

All metal parts are connected to each other. The rack earthing point provides a connection to the external earthing system.

Adjustable feet

To position the rack horizontally on an uneven surface, the rack is standard equipped with adjustable feet.



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Wall connection kit

This kit provides the accessories to mount the rack to the wall.

Packing

The rack is shipped in a reinforced cardboard crate, mounted horizontally on a wooden pallet.

3.2 Rack dimensions and capacity

	UR-S31	UR-S32	UR-S33
Dimensions			
Height	2.2 m	2.2 m	2.2 m
Width	0.8 m	1.0 m	1.2 m
Depth	0.4 m	0.4 m	0.4 m
Max. cable capacity			
Standard number of cables ⁽¹⁾	6	6	12
Max. number of cables	12	24	48
Max. capacity (in ETSI HU's)			
# ETSI HU's (25 mm pitch)	82	82	82
Max. capacity (in # FIST shelves) in rack with base duct (no CEMT)			
# FIST shelves without HPM	14	14	14
# FIST shelves with HPM	12	12	12

(1) In case cables enter the rack from both top and bottom, cable capacities will be higher.

3.2.1 Height occupancy of FIST systems

FIST System	Height occupancy (ETSI HU's)
Base duct	6
CEMT with cover	8
Base duct with CEMT and cover	14
HPM, HPS	7
POM, Raychem standard shelves	5



HPM (horizontal pigtail management)

POM (pigtail orientation module)

CEMT (cable element management tray)

base duct

DSC00023.JPG

3.3 Accessories description

3.3.1 Rack mounting

Floor mounting kit

FIST-UR-FMK

This kit provides the accessories to attach a rack to the floor. Bolts are not included in the kit and should be selected in accordance to the floor conditions to ensure full stability. (the kit contains 4 brackets - 1 is shown on the picture)



DSC00003.JPG

Rack connection kit

FIST-UR-RCK

This kit provides the accessories when connecting two racks side-to-side or back-to-back, including rubber strips to fill the gap between connected racks.



DCP03044.JPG

Panel lock kit

FIST-UR-PLK

One kit provides locks for 1 back or 1 side panel.



UROG021.JPG



F3RUR005B.JPG

Eye bolt kit

FIST-UR-EBK

4 eye bolts can be mounted on the top panel of the rack to lift it with a crane.



UROG020.JPG

3.3.2 Shelf & drum mounting



UROG009.JPG

Drum plate enlarger FIST-UR-DPE

In case shelves are positioned in the bottom or top of the rack, an extra drum beside those shelves might be required. The drum plate enlarger will be mounted in such case on the bottom or top extension brackets of the drum plate.
(T-nuts and screws included in the kit)



UROG011.JPG

Drum plate connection kit FIST-UR-DPCK

This kit is used to connect two drum plates to each other in order to mount drums in the central position of the two connected drum plates.
Length: 249 mm - Capacity: 2 drums
(T-nuts and screws included in the kit)



UROG015.JPG

Shelf positioning level FIST-UR-SPL

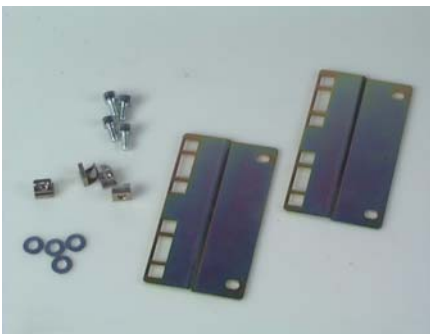
This tool facilitates the installation of the first shelf in the rack. It can be drawn out to suit different distances between the mounting profiles.



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Mounting bracket adapters - 19" to ETSI FIST-UR-MBA-IM

These brackets should be used to mount 19" shelves (125 mm high) on ETSI mounting profiles.



DSC00005.JPG

Mounting bracket adapters - 19" to 23" FIST-UR-MBA-IJ

These brackets should be used to mount 19" shelves (125 mm high) on 23" mounting profiles.

3.3.3 Cable installation



UROG010.JPG

Cable attachment plate

FIST-UR-CAP

Cable strength members and cable outer jackets can be attached on a cable attachment plate which is mounted on the top or bottom extension brackets of the drum plate.



UROG036.JPG

Cable attachment accessories with single cable clamps

FIST-UR-CAA-150-6

This kit contains 6 single cable clamps and 6 strength member fixations to attach the cable jackets and cable strength members to the cable attachment plate.

Cable diameter range: 12-16 mm

Cable attachment accessories with double cable clamps

FIST-UR-CAA-150-12

This kit contains 6 double cable clamps and 12 strength member fixations to attach the cable jackets and cable strength members to the cable attachment plate.

Cable diameter range: 12-16 mm



DSC00001.JPG

Universal strength member fixation kit

FIST-UR-UCT-06 (6 pcs)

Universal strength member fixation kit for strength members with \varnothing between 1 and 5 mm. The kit includes 6 extra strength member terminations, a bolt, a screw and 1 small Allen key. The UCT's can then be attached with the bolt to the cable attachment plate.



UROG022.JPG

Cable shield grounding kit

FIST-UR-CSGK

This kit consists of a plate with 6 grounding points to attach cable shields.

The plate can be installed on the top or in the bottom of the rack (depending on the cable entrance location).

The grounding wire and the connection with the cable shield depend on the cable construction and are not included in the kit.



UROG032.JPG

Cable element management tray

FIST-UR-CENT-I (19")

FIST-UR-CENT-M (ETSI)

The CEMT facilitates the routing of cable elements from the cables to the shelves. It consists of a CEMT tray, a dummy shelf to hold the cover and a cover.

Height occupancy (including cover): 8 ETSI HU (200 mm)



RA11.JPG

Flexible tubing

FIST-GS-FLEX-17-50-S5027

When guiding loose tubes from the cable termination plate to the entrance of the shelf, flexible tubing is used to protect the loose tubes and to control the bend radius.

The flexible tubing has a minimum inner diameter of 17 mm and a capacity of up to 8 loose tubes.



FTC.JPG

Flexible tube clamps

FISTV-FTC

A set of 10 plastic clamps to be used instead of tie-wraps to secure flexible tubes onto the cable element management tray or other locations.



I&C025.JPG

Tie wraps

FISTV-TW-NN-188

188 mm long tie wraps are used for fixing the cable and flexible tubing to the rack.

3.3.4 Pigtail management



OGUR013.JPG

Horizontal pigtail management

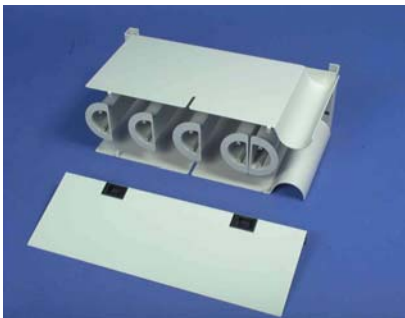
FIST-UR-HPM-I (19")

FIST-UR-HPM-M (ETSI)

A horizontal pigtail management system can be fitted to store overlengths of patchcords for patching within the same rack (intra-rack).

Half round drums are used to guide patchcords entering from the left or from the right side duct. The system can be fitted in the rack either for left or right patchcord entrance by simply turning it upside down.

Height occupancy: 175 mm (7 ETSI HU)



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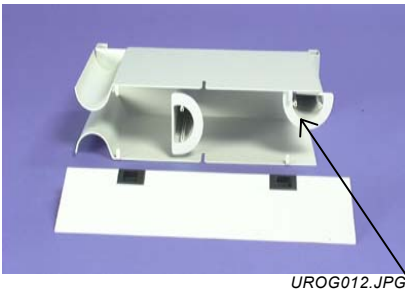
Horizontal pigtail storage

FIST-UR-HPS-I (19")

FIST-UR-HPS-M (ETSI)

This module can be fitted to store excess overlengths of patchcords. It can be fitted in the rack either for left or right patchcord entrance by simply turning it upside down.

Height occupancy: 175 mm (7 ETSI HU)



UROG012.JPG

Pigtail orientation module

FIST-UR-POM-I (19")

FIST-UR-POM-M (ETSI)

A module to be inserted in a rack allowing to redirect or branch a patchcord bundle between the two side ducts.

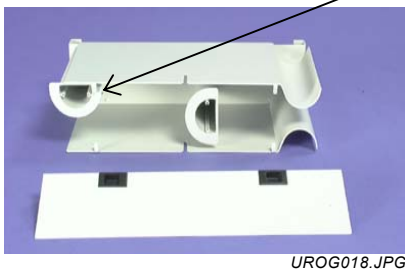
It can be fitted in the rack either for left or right patchcord entrance by simply turning it upside down. Make sure that the drum at the patchcord entrance is always in the correct position (i.e. guiding the patchcords which are entering the shelf).

Height occupancy: 125 mm (5 ETSI HU)



UROG019.JPG

reposition drum if required



UROG018.JPG

3.3.5 Other accessories



UROG-44.JPG

Door lock

FIST-UR-DL-XX

The door lock should be ordered separately.

XX = 00 for standard key number

XX = 01...05 for customer specific key number



UROG033.JPG

Plinth

FIST-UR-PLINTH-XXXX-200

A plinth of 200 mm high can be provided.

XXXX = 800, 1000 or 1200 according to the width of the rack.



FRWR044.JPG

Velcro roll

FISTV-E7187-6316

Velcro to segment or secure pigtails. Supplied on a roll 25 m long (width 25 mm) to be cut to length as required.

3.4 Tools description



T004.JPG

Allen key

FACC-ALLEN-KEY-5-350

Allen Key, diameter 5 mm, length 350 mm for back-mounting of shelves in rack.