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# ***No-Drill MOBRA Installation Guide***

*Instructions for installing No-Drill MOBRA's into the  
UG Network*

## ***About this document ...***

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### **Content approval**

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# 1 ***Introduction***

This ISIS document describes the practices required to install No-Drill MOBRA's into underground structures

With the introduction of new fibre joints for NGA, comprising of aggregate and splitter nodes, a review of the MOBRA joint support brackets has been commissioned to facilitate more flexible positioning of the MOBRA arm and associated joints in the appropriate jointing chambers. A number of added safety orientated initiatives have also been considered and implemented within the revised MOBRA components.

Note: The legacy MOBRA's - both fixed and No Drill – are still perfectly functional and fit for purpose. The new No-Drill MOBRA arrangements are specific to NGA FTTC/P networks.

## 2 ***MOBRA Installation***

The new NGA specific MOBRA's will comprise only of the No-Drill MOBRA options, not original fixed position arrangements. The new MOBRA's will cover all the current footway jointing chambers and the new proposed jointing chamber – the JRF102/4 node.

To aid planners and works originators, an easy to follow stores ordering matrix has been compiled and will act as a component quick ready reckoner. This can be found below in Appendix 1.

### 2.1 **The JBF/JUF 102 and JRF102/4 Nodes**

The most significant MOBRA changes affect JF2 chambers.

The new JF2 mounting frame is based on the more familiar expanding steel tubular box design seen in the JF4 and larger boxes.



**Figure 1 (Above):** The new JF2 MOBRA mounting frame. Item Code 088199 (CN15752). Fitting is exactly the same process as in the larger chambers.



**Figure 2 (above):** The older, more familiar JF2 MOBRA mounting frame / pivot and arm. This legacy frame is still fit for purpose but will be superseded by the new design.

<b>Mobra Stores Ordering Matrix JBF/JUF102 &amp; JMF102 incl. JRF102/4 Node</b>			
Item	I/C	CN Drawing	Number Required per Box
No Drill Mounting Frame	066824	CN 15752	1
Modular Box Integrated Adapter (L&R)	066825	CN 15751	1 Set (L&R)
Pivot & Arm for Prysmian 32 FDP Series	Not Required – Pivot & Arm supplied with Joint		
Pivot & Arm for Tyco 32 FDP Series	Not Required – Pivot & Arm supplied with Joint		

### 2.1.1 How to fit the JF2 MOBRA mounting frame:

The MOBRA mounting frame is placed against the chamber end wall and fixed by tightening the M20 hex nut on the central rail in a clockwise direction. Ensure the anti-slip M20 spring washer is in place, as vibration from passing or nearby traffic can work the tightening hex bolt loose, resulting in the MOBRA frame slipping down.

The pivot and arm can slide along the top rail of the expandable framework / mounting giving flexibility of location and ensuring there is no obstruction from the side of chambers.

**Note:** There are no separate individual pivot and arms components for the JF2 MOBRA bracket; these will be supplied along with the joint kits.

The following joints cannot be fitted in any of the JF2 chambers:-

- Tyco 24 Fibre Distribution Point (FDP) (Pivot and Arm)
- Aggregation Node (AN) and Splitter Node (SPN) (Pivot and Arm)
- Generic Joint 3A

## 2.2 JBF/JUF 104 and JBF/JRF 106 Nodes

For JF4 / JF6 chambers, the MOBRA mounting frame is exactly the same unit that is currently used. The only change is to the Pivot Arm bearer supporting the joint.

The CN drawing of the mounting frame does not change. However, the Item Code has changed from 060627 to **Item Code 066823**.



**Figure 3 (Above):** No-Drill MOBRA mounting bracket for JF4 / JF6 chambers

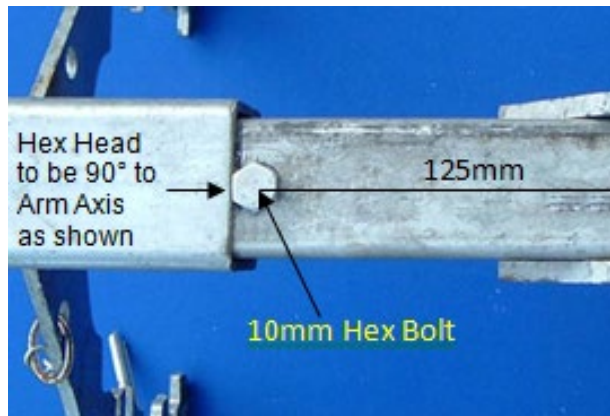
*Note:* In some cases, the chamber may be of non-standard, narrow construction and it may be necessary to modify the bracket to fit, by hacksawing 40mm off the square and round section bars.

The changes to the Pivot Arm bearer are primarily to maintain the correct bend radius of the fibre cable by drilling a new hole and adding a 10mm hex bolt head into the upper flat surfaced arm, 125mm from the arm pivot point. This physically prevents the joint mounting plate and joint travelling too far down the arm bearer and bringing the fibre cables into contact with the front end of the pivot bracket. It is also seen as an additional safety feature in that it will prevent the mounting plate slipping down the arm bearer and possibly trapping fingers.

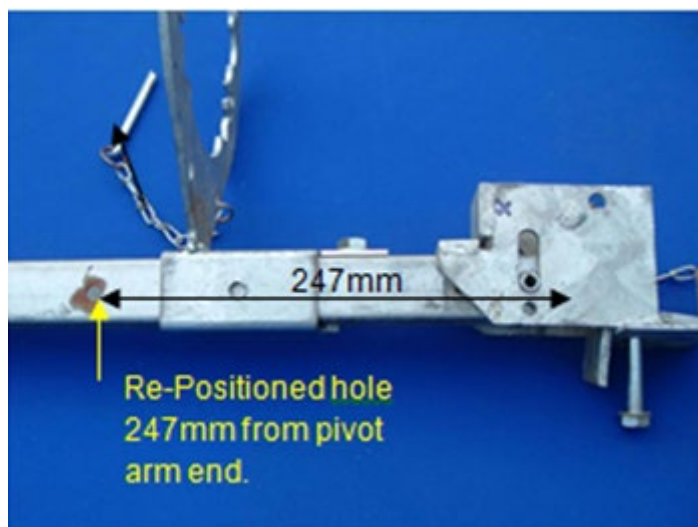
Another safety feature to be added is a rubber cap end that is placed on the end of the pivot arm bearer. This follows safety concerns raised from the field and CWU in respect of leg and arm injuries resulting with contact of the pivot arm end, where the machine clean cut pivot arms end can in some cases be deemed sharp to the touch.



**Figure 4 (Above):** The Pivot Arm bracket, no changes.



**Figure 5 (Above):** 10mm hex bolt added to Pivot Arm.



**Figure 6 (Above):** Note new hole position alongside of pivot arm.





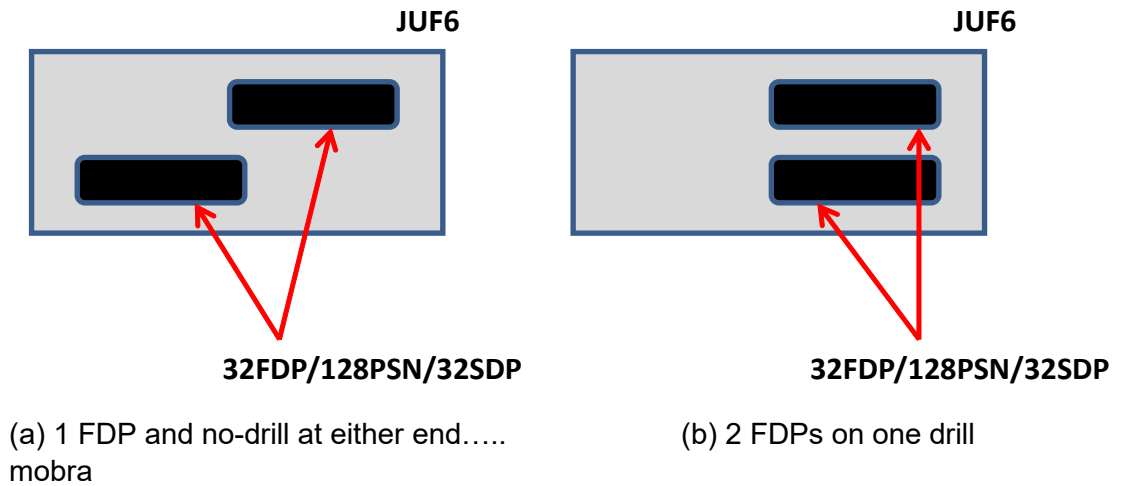
**Figure 7 (Above):** New end cap for Pivot Arm

<b>MOBRA Stores Ordering Matrix JBF / JUF104 and JBF / JRF106 incl Modular</b>			
Item	I/C	CN Drawing	Number Required per Box
No Drill Mounting Frame	066823	CN 15710	1
Pivot & Arm (for Tyco Nodes Only)	066826	CN 15710	1
Mounting Plate for Tyco 24 FDP	060624	CN 15711	1
Mounting Plate for either AN & SN	Mounting Plate supplied with Joint		
Mounting Plate for Generic Joint 3A	060620	Not Available	1
Modular Box Integrated Adapter (L&R)	066825	CN 15751	1 Set (L&R)
Pivot & Arm for Prysmian 32 FDP Series	Pivot & Arm supplied with Joint		
Pivot & Arm for Tyco 32 FDP Series	Pivot & Arm supplied with Joint		

The 106 boxes can accommodate upto 2 FDPs (or equivalent) and 2 no-drill mounting frames (see sketches below):-

1 FDP and no-drill at either end (diagonally opposite each other) as per fig a

2 FDPs on one drill mobra (using U channel adapter supplied with the FDP to enable the knuckle to be clamped on mobra mounting arm) as per fig b



## 2.3 JBF/JRF 110 and 111 Nodes



**Figure 8 (Above):** No-Drill MOBRA mounting bracket for JF10 / JF11 chambers.

For JF10 MOBRA brackets, the only change is to the Pivot Arm bearer supporting the joint. The MOBRA mounting frame is exactly the same unit that is currently used. The CN drawing is the same, however the stores Item Code has changed from 060626 to Item Code 066822.

The JF10 / 11 MOBRA brackets have the same features and fittings as per the JF6 version(s). This includes the new 10mmHex bolt head into the upper flat surfaced arm.

MOBRA Stores Ordering Matrix JBF / JRF110 &111			
Item	I/C	CN Drawing	Number Required per Box
No Drill Mounting Frame	066822	CN 15710	1 or 2 (if used both ends of chamber)
Pivot & Arm	066826	CN 15710	Up to 2 each end (maximum)
Mounting Plate for Tyco 24 FDP	060624	CN 15711	Up to 2 each end (maximum)
Mounting Plate for either AN & SN	Mounting Plate supplied with Joint		
Mounting Plate for Generic Joint 3A	060620		Up to 2 each end (maximum))
Pivot & Arm for Prysmian 32 FDP Series	Not Required – Pivot & Arm supplied with Joint		
Pivot & Arm for Tyco 32 FDP Series	Not Required – Pivot & Arm supplied with Joint		

Note – the 'U' spacer/adaptor for a second node is supplied with node, mobra arm and knuckle



**Figure(s) 9 (Above):** The additional corner brackets that are required to attach the MOBRA mounting frame to the modular chamber rings. Item Code 066825, CN drawing 15751.



**Figure 10 (Above):** The legacy existing fixed position modular MOBRA mounting frames do not need replacing and can remain 'insitu'.

## 2.4

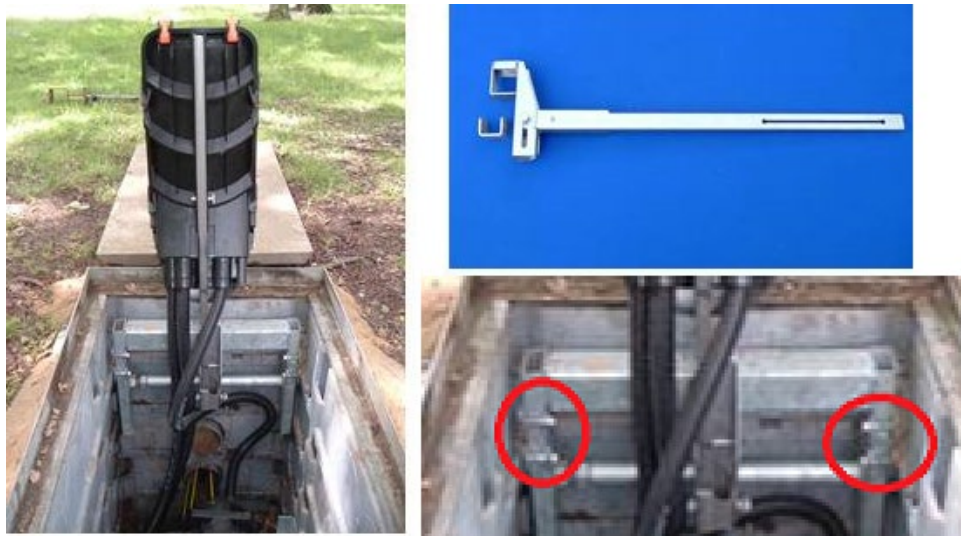
### Other associated MOBRA items



**Figure 11 (Above):** Mounting Plate for joint 3A, Aggregation Node (AN) and Splitter Node (SPN) Joints (left) and 24 FDP Joint (right).

The Mounting Plate for the Aggregation Node and Splitter Node will be issued by the supplier with the associated joints. For the Generic 3A, joint the mounting plate will need to be booked out separately from the stores on Item Code 060620.

The Mounting Plate for the 24 FDP joint will required to be booked separately from the stores on Item Code 060624, CN drawing 15711.



**Figure 12:** Pivot (above) and Arm (top right) for the 32 FDP joint (comes supplied)

*Note:* When fitting the No-Drill frame to a modular chamber, the Corner Brackets (red highlights) must clamp the frame between the two horizontal bars, as shown above – this minimises the leverage weight on the frame and risk of collapse.

ITEM CODES FOR NEW MOBRA COMPONENTS		
Item:	Old Item Code:	New Item Code:
No Drill Mobra Bracket JF110/111	060626	066822
No Drill Mobra Bracket JF104/106	060627	066823
No Drill Mobra Bracket JF102/102-4 Node	060630	066824
No Drill Modular Conversion JMF102/4/6	N/A	066825
Mobra for Modular box JMF104	064780 + 045798	066823 + 066825
Mobra for Modular box JMF106	064781 + 045799	066823 + 066825
Mobra Arm & Pivot Joint JF 110/6/4	N/A	066826

*Note:* the 'U' spacer/adaptor for a second node is supplied with node, mobra arm and knuckle

## 2.5 Upgrading Legacy No-Drill MOBRA's

On legacy versions of the No-Drill MOBRA brackets (Joint boxes JF104, 106, 110 and 111) there were no spring washers fitted behind the M20 tightening nut of the middle rail.

The omission of the spring washer has been found in some circumstances responsible for the tightened M20 hex-head nut loosening and resulting in



some MOBRAs tipping over due to passing traffic vibration. This has the potential to damage fibre cable by exceeding their bending radius.

To overcome this, it is proposed that local purchase M20 Spring Washers are carried by engineers who encounter MOBRAs (without no spring washers) and retrospectively fit the spring washers to the mounting brackets.

All new supplied MOBRAs will have the spring washer attached.



**Figure 13 (Above).** The M20 spring washer installed in the correct position between the fixing bolt and static / adjustable frame. Right – the required M20 spring washer for retrospective fitting.

The washer is to be obtained by local purchase method. Zinc-plated washers for this remedial action will be adequate.

## **2.6 Appendix 1 - NGA MOBRA system ordering matrix**

1. Select Footway Box size to determine NGA No-Drill MOBRA item Code (BLUE)
2. If modular then add the NGA No-Drill MOBRA Modular Box Adaptor item code (GREEN)
3. Select Supplier and Joint detail to determine the Pivot and Arm item code (RED)

**UNCONTROLLED IF PRINTED***No-Drill MOBRA Installation Guide**MOBRA Installation*

NGA MOBRA SYSTEM ORDERING DETAILS				
Footway Box	JUF2	NGA 4x2	JUF4/6	JUF 10/11
NGA No Drill MOBRA Mounting Bracket only (no pivot & arm)	IC 066824 Drawing CN15752		IC 066823 Drawing CN15710	IC 066822 Drawing CN15710
If Modular add adaptor	IC 066825		Drawing CN15751	
Joint Detail & Supplier				
TE (Tyco)				
24FDP (Pivot & Arm)	Not Applicable		IC 066826 + Mtng Plate 060624 / Drawing CN15711	
AN & SPN (Pivot and Arm)	Not Applicable		IC 066826 Mtng Plate Supplied with Joint	
Generic Joint 3A	Not Applicable		IC 066826 + Mtng Plate 060620	
Prysmian - 32FDP Series	Non required - Pivot & Arm supplied with Joint			
Tyco – 32 FDP Series	Non required - Pivot & Arm supplied with Joint			

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