



## **INSTALLATION, OPERATION & MAINTENANCE MANUAL**

**for the**

**TYPE DC0300\*\* INTERLOCK VARIANTS**



## DIVEX LTD

**DOCUMENT NUMBER:** DC-OM-428 (LEGACY NO: OM134)

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## 1.0 INTRODUCTION

The Divex Type DC0300\*\* Interlock is designed to prevent the doors of medical, equipment or transfer locks being opened while under pressure. Correctly installed and configured, the DC0300\*\* interlock provides an IMCA compliant interlocking mechanism. Various lengths of bolt assemblies are available to suit special installation requirements, making up the DC0300\*\* variants. Please consult Divex Sales for more information.

Positive engagement of the Interlock bolt with an appropriate part of the door/hatch mechanism, such as the hand-wheel, mechanically locks moving parts to prevent pressurised compartments from being opened.

As the compartment is pressurised, the locking/sealing pin is held firmly in contact with an internal sealing surface. In this condition, the release button cannot depress the locking/sealing pin hence the bolt is mechanically locked in the extended position.



## 2.0 INSTALLATION

***Refer to drawing P21131S1 for installation configuration.***

The Type DC0300\*\* Interlock is equipped with two ½” NPT (Female) connection ports. The outlet port ‘A’ position can be adjusted by increments of 60° to suit the installation configuration. Various lengths of bolt assemblies (items 5, 8 & 9) are available to suit special installation requirements.

Please consult Divex Sales for more information.

An appropriate Interlock bracket, not supplied, must be fitted to the equipment/chamber and have provision for six M8 mounting holes and access to port ‘B’.

In its extended position the interlock bolt must engage the door mechanism sufficiently to prevent the door/hatch from being opened. The Divex Type DC0300\*\* is a safety device and careful consideration must be given to the installation and operation of this device. Please consult with Divex for guidance if necessary.



### 3.0 OPERATION

To operate the Divex Type DC0300\*\* Interlock, slide the bolt assembly fully inwards to allow the spring loaded locking/sealing pin (item 7) to mechanically engage the bolt and lock it in that position.

The system is now ready to be pressurised, ensuring that the locking/sealing pin remains fully engaged with the bolt.

Operation of the release button, while the system is pressurised, will have no effect whatsoever as the button spring cannot provide sufficient force to dislodge the locking/sealing pin.

To release the Interlock, firstly depressurise the system fully then depress the release button. The locking/sealing pin will be disengaged from the groove in the bolt, allowing full retraction of the bolt from the door mechanism.

If an attempt is made to pressurise the system with the Interlock bolt in the retracted position, the pressurising gas will escape through vent ports in the Interlock body.



## 4.0 MAINTENANCE

**Refer to drawing P21131S1.**

**Warning:** The Type DC0300\*\* Interlock has springs under compression.  
Wear appropriate PPE.  
Maintain cleanliness suitable for breathing gas service.

Release system pressure and remove interlock from gas circuit prior to any maintenance/service activity of the interlock.

To disassemble the interlock;

- a. While retaining the release button (item 2), remove the two socket setscrews (item 10), which retain the spring-loaded release button.
- b. Withdraw the release button and the spring.
- c. Remove the 6 each capscrews (item 11).
- d. Withdraw the base and the spring.
- e. Remove the socket setscrew (item 10).
- f. Withdraw bolt.
- g. Push the locking/sealing pin from the Interlock body.

Clean and inspect all components for wear or damage and replace as required.  
When re-assembling the interlock, use Divex service kit P/N: DC0300202 to replace seals and dog-point setscrews.

Lubricate replacement seals (items 12, 13 & 14) with a film of Christolube (item 16) grease and fit into position.



To reassemble interlock;

- a. Position locking/sealing pin in body.
- b. Position interlock bolt with slot aligned with the dog point socket setscrew position.
- c. Apply Loctite 601 to the thread of the dogpoint socket setscrew (item 10) and refit to the body.
- d. Tighten dogpoint socket setscrew against the bottom of the slot then back off by between  $\frac{1}{4}$  to  $\frac{1}{2}$  turn to ensure free operation.
- e. Push assembly tool (item 15) up through the Interlock base then slide the compression spring (item 4) over the spindle of the tool.
- f. Position the base, with assembly tool & spring in place, onto the end of the body ensuring that the spring is correctly seated in the central recess of the locking/sealing pin and push base until fully seated.
- g. Coat the threads of the 6 each capscrews (item 11) with Loctite 601 and refit. Torque to 13.6 Nm (10 ft-lbs).
- h. Withdraw the assembly tool and retain for future servicing.
- i. Position the release button spring (item 3), ensuring that it is correctly seated in the end of the locking/sealing pin.
- j. Coat threads of 2 each dogpoint socket setscrews (item 10).
- k. Position the release button (item 2) and fit dogpoint socket setscrews (item 10) ensuring the button is able to move freely.





## 5.0 TESTING

Refer to drawing **P21131S1** and follow test procedure as per **Appendix A – Test Procedure**.

If individual readings are higher than **1 psi**, inspect internal components for cleanliness and damage, rectify as necessary, reassemble and retest.

If satisfactory operation is not subsequently achieved contact Divex Service Department.

***Please note, low ambient temperatures may increase sealing pressure.***



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## 6.0 APPENDICES

Appendix A – Test Procedure

Appendix B – Drawing Ref: P21131S1

Appendix C – Drawing Ref: P211313S1



## Appendix A – Test Procedure

### 1. Leak Test

- [a] Plug **Port B** of Interlock
- [b] Connect test gauge and pressure line to **Port A**
- [c] Interlock bolt to be in **engaged position**
- [d] Test pressure to be **45 Bar (652 psi)**
- [e] Test duration to be **30 minutes**

### 2. Function Test

Connect test gauge and vent line with valve to **Port B**  
 Connect very low pressure air supply with valve to **Port A**

- [a] With interlock bolt in the **retracted position**, and vent valve open, slowly increase pressure checking that all gas escapes through the vent.
- [b] With interlock bolt in **engaged position**, and vent valve closed, slowly increase pressure checking that no gas escapes via vent holes.
- [c] Slowly decrease pressure and ensure interlock holds pressure down to **1 psi**.
- [d] With Interlock bolt engaged and vent valve closed, slowly increase pressure in Port A to **4 psi** and close valve.  
 Hold down release button and slowly depressurise, noting the pressure at which the Locking/Sealing Pin releases.  
 Conduct test five times and record pressures below.

PRESSURE 1	PRESSURE 2	PRESSURE 3	PRESSURE 4	PRESSURE 5

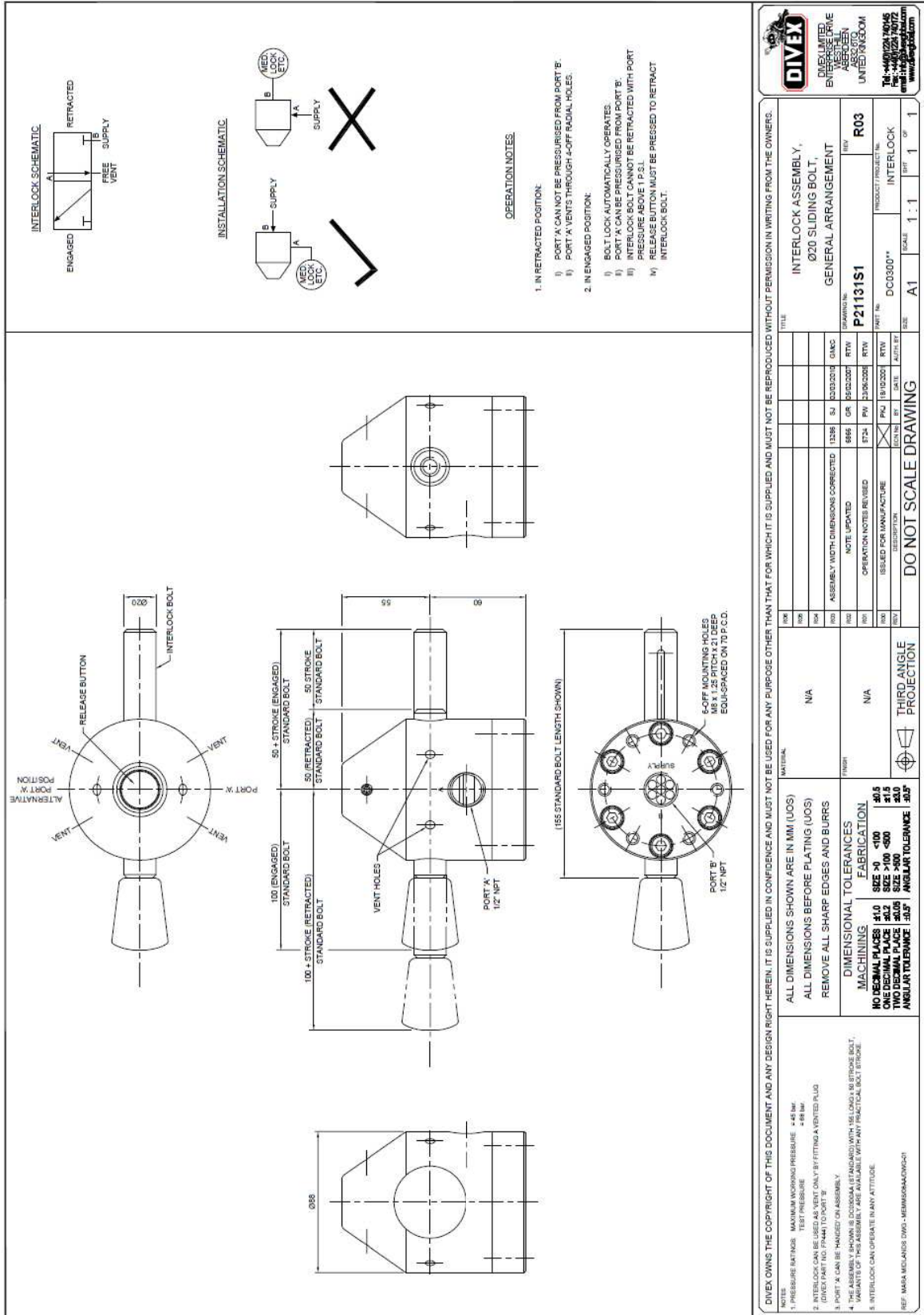
Average release pressure	
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Test Gauge Serial Number	
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Tested		
<i>Signature</i>	<i>Print Name</i>	<i>Test Date</i>



Appendix B – Drawing Ref: P21131S1





Appendix C – Drawing Ref: P211313S1

ITEM No.	PART No.	DESCRIPTION	QTY.	KIT
1	DC0300301	BODY, INTERLOCK	1	
2	DC0300305	BUTTON, RELEASE, INTERLOCK	1	
3	DC0300307	SPRING, COMPRESSION, INTERLOCK	1	
4	DC0300308	SPRING, COMPRESSION, INTERLOCK	1	
5	DC0300309	KNOB, PLASTIC, INTERLOCK	1	
6	DC0300311	BASE, INTERLOCK	1	
7	DC0300312	LOCKING/SEALING PIN, INTERLOCK	1	
8	DC0300320	BOLT, INTERLOCK, STD. 50MM STROKE, 155MM CAL	1	
9	F8155	STUDING, STAINLESS STEEL, M12 X 1.75 X 1 METRE	0.045	
10	F8156	SET SCREW, SKT. DOG POINT, M6 X 12 LG. 31.6S3	3	
11	F8236	SCREW, CAP, SKT, M8 X 1.25 X 25 LG. 31.6 S3	6	
12	E13494	O-RING	1	
13	RN970-65	O-RING	1	
14	RN0136-7	O-RING	1	
15	DC0300306	ASSEMBLY TOOL	1	
16	SM034	GREASE, CRISTO-LUBE MCG-111, 2.0Z TUBE	1	

SERVICE KIT P/N: DC0300202

SECTION A-A  
SCALE 1:1.5

SECTION B-B  
SCALE 1:1.5

**PORT IDENTIFICATION**

<p><b>DIVEX</b> DIVEX LIMITED WESTHILL ENTERPRISE DRIVE AB33 6TQ UNITED KINGDOM</p> <p>Tel: +44(0)1224 740145 Fax: +44(0)1224 740172 Email: info@divexglobal.com www.divexglobal.com</p>																																																																																																																																									
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<p>NOTES</p> <ol style="list-style-type: none"> <li>UNIT IS SHOWN BY LOCATION OF PART 'W' (NORTH) LOCATED AS SHOWN.</li> <li>USE ASSEMBLY TOOL (ITEM 15) TO LOCATE COMPRESSION SPRING (ITEM 4).</li> <li>USE ASSEMBLY TOOL (ITEM 11) TO A TORQUE SETTING OF 1.5Nm (109 In-Lb).</li> <li>USE ASSEMBLY TOOL (ITEM 11) TO A TORQUE SETTING OF 1.5Nm (109 In-Lb).</li> </ol> <p>WORKING PRESSURE: AS SHOWN DESIGN TEMPERATURE: -20°C, 50°C DESIGN CODE FOR MORE INFORMATION CATEGORY 3</p> <p>Denotes Changes Made At This Revision</p>		<p>REVISIONS</p> <table border="1"> <tr><th>NO.</th><th>DATE</th><th>BY</th><th>REASON</th></tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td></tr> <tr><td>11</td><td></td><td></td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td></tr> <tr><td>13</td><td></td><td></td><td></td></tr> <tr><td>14</td><td></td><td></td><td></td></tr> <tr><td>15</td><td></td><td></td><td></td></tr> <tr><td>16</td><td></td><td></td><td></td></tr> </table>	NO.	DATE	BY	REASON	1				2				3				4				5				6				7				8				9				10				11				12				13				14				15				16																																																																						
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