



SCIEX OS

Devices Setup Guide



This document is provided to customers who have purchased SCIEX equipment to use in the operation of such SCIEX equipment. This document is copyright protected and any reproduction of this document or any part of this document is strictly prohibited, except as SCIEX may authorize in writing.

Software that may be described in this document is furnished under a license agreement. It is against the law to copy, modify, or distribute the software on any medium, except as specifically allowed in the license agreement. Furthermore, the license agreement may prohibit the software from being disassembled, reverse engineered, or decompiled for any purpose. Warranties are as stated therein.

Portions of this document may make reference to other manufacturers and/or their products, which may contain parts whose names are registered as trademarks and/or function as trademarks of their respective owners. Any such use is intended only to designate those manufacturers' products as supplied by SCIEX for incorporation into its equipment and does not imply any right and/or license to use or permit others to use such manufacturers' and/or their product names as trademarks.

SCIEX warranties are limited to those express warranties provided at the time of sale or license of its products and are SCIEX's sole and exclusive representations, warranties, and obligations. SCIEX makes no other warranty of any kind whatsoever, expressed or implied, including without limitation, warranties of merchantability or fitness for a particular purpose, whether arising from a statute or otherwise in law or from a course of dealing or usage of trade, all of which are expressly disclaimed, and assumes no responsibility or contingent liability, including indirect or consequential damages, for any use by the purchaser or for any adverse circumstances arising therefrom.

For research use only. Not for use in diagnostic procedures.

AB Sciex is doing business as SCIEX.

The trademarks mentioned herein are the property of AB Sciex Pte. Ltd. or their respective owners.

AB SCIEX™ is being used under license.

© 2016 AB Sciex



AB Sciex Pte. Ltd.
Blk 33, #04-06
Marsiling Ind Estate Road 3
Woodlands Central Indus. Estate.
SINGAPORE 739256

Contents

Chapter 1 Introduction	4
Related Documentation.....	4
Technical Support.....	4
Contact Us.....	4
Chapter 2 ExionLC™ Series	6
ExionLC™ Device Configuration.....	6
Configure the Controller.....	6
Connect Devices to the Controller.....	8
Configure the Controller for a Newly Attached Device.....	8
Chapter 3 Agilent Device Configuration	9
Device Communication Configuration.....	9
Configuration of Agilent Devices Through LAN (Ethernet) Communication.....	9
Configuration of Agilent Devices with CAN Cables.....	9
Autosampler Configuration.....	10
Connect the Agilent Autosampler.....	10
Pump Configuration.....	11
Connect the Agilent Pump to the Computer.....	12
Column Oven Configuration.....	13
Agilent Column Oven.....	13
Detector Configuration.....	14
Diode Array Detector.....	15
Connect the Diode Array Detector to the Computer.....	15
Chapter 4 Shimadzu Series Devices	16
Shimadzu Device Configuration.....	17
Configure the Controller.....	17
Connect Devices to the Controller.....	19
Configure the Controller for a Newly Attached Device.....	19
Revision History	20

This guide is intended for customers and Field Service Employees (FSEs) who are responsible for configuring devices to work with the mass spectrometer. Devices are controlled automatically during LC-MS/MS data acquisition through the SCIEX OS.

Some hardware setup and configuration is required so that the supported devices and the mass spectrometer can communicate properly. Use the procedures in this guide to connect and configure the devices and the system.

For Shimadzu devices, Ethernet cables are required to connect the controller and PDA detector to computer. The PDA detector is an optional component. Optical cables are also required to connect the remaining devices to the controller.

Related Documentation

Documentation for the mass spectrometer can be found on the *Customer Reference* DVD for the mass spectrometer.

Documentation for the ion source can be found on the *Customer Reference* DVD for the ion source.

Technical Support

SCIEX and its representatives maintain a staff of fully-trained service and technical specialists located throughout the world. They can answer questions about the system or any technical issues that might arise. For more information, visit the Web site at sciex.com.

Contact Us

SCIEX Support

- sciex.com/contact-us
- sciex.com/request-support

Customer Training

- In North America: NA.CustomerTraining@sciex.com
- In Europe: Europe.CustomerTraining@sciex.com

- Outside the EU and North America, visit sciex.com/education for contact information.

Online Learning Center

- training.sciex.com

The following ExionLC™ Series devices are supported by the software.

- ExionLC Controller
- ExionLC AC Pump
- ExionLC AC Autosampler
- ExionLC AC Column Oven - 100V
- ExionLC AC Column Oven - 120V
- ExionLC AC Column Oven - 240V
- ExionLC UV Detector
- ExionLC AD Pump
- ExionLC AD Autosampler

ExionLC™ Device Configuration

Use the ExionLC Controller to connect to and control ExionLC Series LC systems using the software.

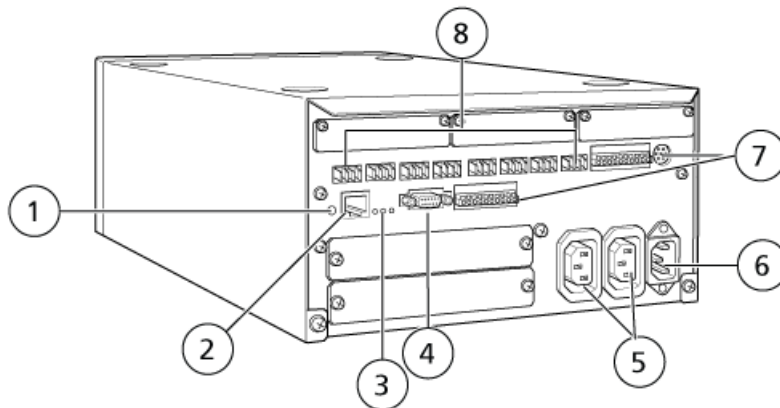
Configure the Controller

Use the following procedures to configure the controller.

Connect the Controller to the Computer

1. Turn off the controller by pressing the On/Off button.

2. Connect the Ethernet cable from the Ethernet port at the back of the controller to the Ethernet port on the computer.



Item	Description
1	Initialization button.
2	Ethernet connector (ETHERNET). Connects to the network.
3	Network LEDs. Show the status of the connection to the network. <ul style="list-style-type: none"> • 100M: Turns on when operating at 100 Mbps. • ACT: Turns on when exchanging data. • LINK: Turns on when linked to the network.
4	RS-232C connector. Not supported.
5	AC output connectors. These connectors are for AC power output and are operationally linked to the power switch. They can be used to supply power to . Do not use them for any other application.
6	Power cord connector. Connects to the mains supply.
7	External Input/Output terminals.
8	Remote connectors 1 to 8. Connect to components.

3. Set the IP address in Windows to 192.168.200.1.

Do not set the subnet to 98 or 99.

Connect Devices to the Controller

The autosampler, pump, column oven, UV detector, or PDA detector can be connected to the controller. The PDA Detector requires a switching hub to connect to the controller and the acquisition computer. Refer to the documentation that comes with the devices.

Connect the Devices

1. Turn off the devices by pressing the On/Off button.
2. Turn off the controller by pressing the On/Off button.
3. Connect the fiber optic cable from the device to the back of the controller.
 - Connect the autosampler to fiber optic port 1.
 - Connect pump A to fiber optic port 3.
 - Connect pump B to fiber optic port 4.
 - Connect the column oven to fiber optic port 5.
 - Connect the UV detector to fiber optic port 6.

Configure the Controller for a Newly Attached Device

- Turn off the controller and other devices, wait two seconds, and then restart all devices, turning on the controller last.

Note: The model number for each connected device appears on the System Configuration screen. The message Remote appears on any connected pump.

Device Communication Configuration

This section provides information about configuring the Agilent series devices using a LAN (Ethernet) communication, with CAN cables. The Flexible Cube must be connected to the autosampler.

Note: Use CAN cables when configuring multiple Agilent devices in a stack configuration. Refer to [Configuration of Agilent Devices with CAN Cables on page 9](#).

Configuration of Agilent Devices Through LAN (Ethernet) Communication

Connect the Agilent series autosamplers, pumps, column oven, and diode array detector to the computer through LAN (Ethernet) communication. The required LAN (Ethernet) cables are supplied by Agilent. Use Agilent PN G5183-4649 for a direct connection from the device to the computer.

Install a network interface card in the Agilent device. Refer to the Agilent documentation.

Note: The 1290 module is shipped with all switches Down (Off). For any LAN configuration, SW1 and SW2 must be Down.

Configuration of Agilent Devices with CAN Cables

Use CAN cables in conjunction with a LAN (Ethernet) cable to configure a stack of Agilent devices. In an Agilent stack configuration, a single device is connected to the computer with a LAN (Ethernet) cable. Any additional Agilent devices are then connected to each other (in series) with CAN cables.

To monitor and control the stack manually, connect a handheld Agilent series control module to one of the CAN connections at the back of any Agilent device. The devices connected by CAN cables in the stack must match the devices in the SCIEX OS device profile. If a fault occurs in the CAN-linked stack, then restart all of the devices in the stack.

Note: All devices connected by CAN must be on the same suite of firmware.

For more information on configuring Agilent devices with CAN cables, refer to the Agilent documentation.

Autosampler Configuration

This section provides information on the required autosampler hardware, how to connect the autosampler to the computer and the mass spectrometer, and how to configure the most current autosampler for external control.

The cables for the Agilent autosamplers are included with the mass spectrometer. A network interface card is required for the LAN (Ethernet) connection.

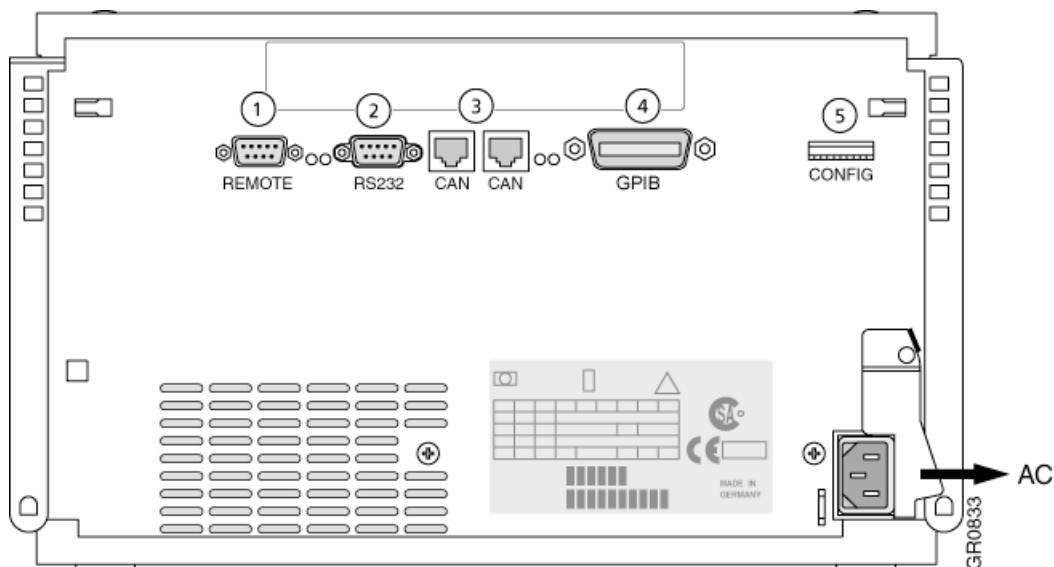
Table 3-1 Supported Agilent 1290 Series Autosampler

Autosampler	Model Number
Standard autosampler	G4226A

Connect the Agilent Autosampler

This procedure describes how to connect the Agilent autosampler to the computer through standard serial port communication. The Agilent autosampler can also be connected to the computer using a CAN cable.

Figure 3-1 Back Panel of the Agilent Autosampler



Item	Description
1	Remote port
2	Serial port
3	CAN connectors

Item	Description
4	Agilent GPIB
5	DIP switches

Connect the Autosampler to the Computer

1. Turn off the Agilent autosampler by pressing the On/Off button on the front of the device.
2. Shut down the acquisition computer.
3. Connect the CAN cable from the autosampler.
4. Set the DIP switches at the back of the autosampler for a baud rate of 19 200.

For the location of the DIP switches at the back of the autosampler, refer to [Figure 3-1](#).

Pump Configuration

This section describes the required hardware for each pump, how to connect the pump to the computer, and how to configure the pump for external control. Either the pump or DAD can be connected using the LAN (Ethernet) connection. If both a pump and DAD are used in the device profile, then make sure that the DAD is connected using the LAN (Ethernet) connection. A network interface card (PN 1016082) is required for the LAN (Ethernet) connection.

Table 3-2 Supported Agilent 1290 Series Pump

Pumps	Model Number 1290
Binary	G4220A

Note: The Agilent G4220A Binary Pump contains a software-controlled Purge valve. The SCIEX OS allows users to control the purge option through the acquisition method. For more information, refer to the most current SCIEX OS *Release Notes*.

The following table lists the required hardware. For the latest version of firmware supported, refer to the most current SCIEX OS *Release Notes*. Depending on how the system is configured, all of the following cables might not be required.

Agilent Device Configuration

Table 3-3 Required Hardware for 1290 Pumps

Cable	Other Parts Needed
<ul style="list-style-type: none"> CAN cable (ships with Agilent system) 	<ul style="list-style-type: none"> Network interface card (PN 1016082) if using a LAN (Ethernet) connection

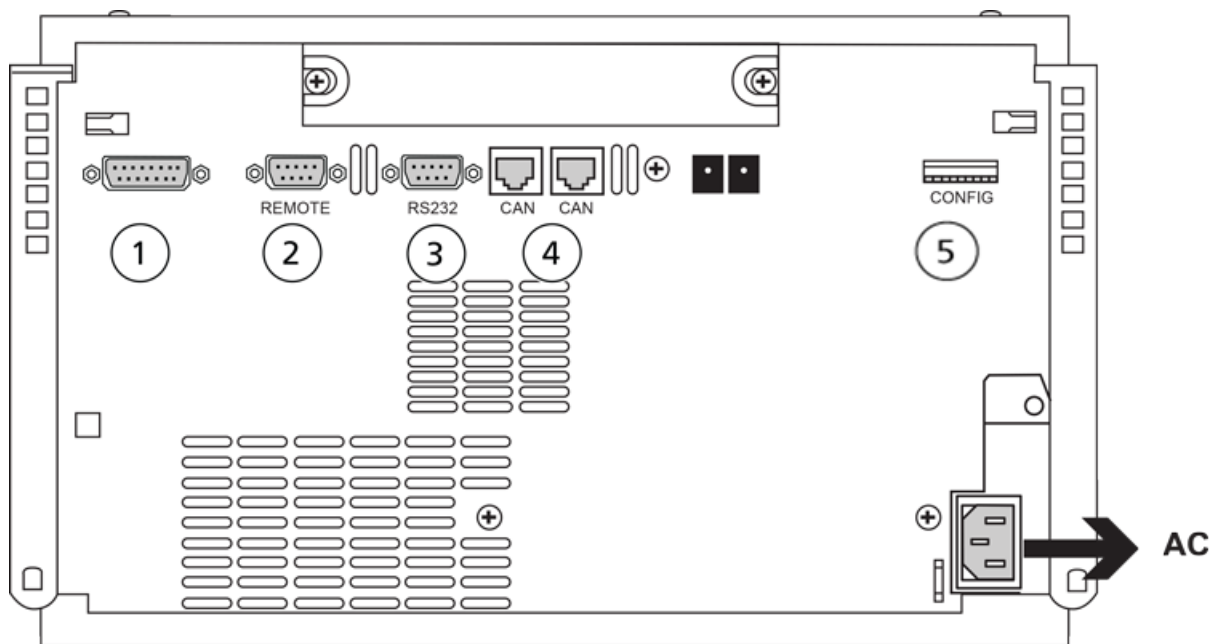
Connect the Agilent Pump to the Computer

This procedure describes how to connect the Agilent pump to the computer through standard serial port communication. Connect the Agilent pump to the computer with a LAN (Ethernet) cable.



WARNING! Electrical Shock Hazard: Refer to the Agilent Pump Safety Instructions before configuring any AC mains-powered equipment.

Figure 3-2 Agilent Pump (back) with External Relay Contacts Board Installed



Item	Description
1	Agilent GPIB
2	Remote connector
3	Serial port

Item	Description
4	CAN connectors
5	DIP switches

1. Shut down the computer.
2. Turn off the pump by pressing the On/Off button.
3. Connect the CAN cable and the LAN (Ethernet) cable.

Column Oven Configuration

This section provides information about the required hardware and how to connect a column oven to the computer.

Agilent Column Oven

The SCIEX OS supports the following Agilent column oven models and switching valves:

Table 3-4 Supported Agilent Models and Switching Valves

Models	Valves
G1316C (1290 series)	<ul style="list-style-type: none"> • 6-port/2-position valve • 10-port/2-position valve

The following table lists the required hardware. For the latest version of supported firmware, refer to the current SCIEX OS *Release Notes*.

Table 3-5 Required Hardware for the Agilent Column Ovens

Other Parts Needed
<ul style="list-style-type: none">• Agilent PN G5183-4649 (for a direct LAN [Ethernet] connection)• CAN cable (provided with the Agilent system)

Detector Configuration



WARNING! Electrical Shock Hazard: Refer to the Agilent Diode Array Detector safety instructions before configuring any mains-powered equipment.

The SCIEX OS supports the following detectors:

- ExionLC UV Detector. Refer to [ExionLC™ Device Configuration on page 6](#).
- Agilent diode array detectors (DADs).
- Shimadzu UV-VIS detector. Refer to [Shimadzu Device Configuration on page 17](#).

The following types of Agilent diode array detectors are supported by the SCIEX OS .

Table 3-6 Supported Detectors

Detector	Model Number
Agilent 1290 DAD	G4212A

The Agilent G4212A DAD has one lamp source. The usable wavelength range is 190 nm to 640 nm. The G4212A also supports slit widths up to 8 nm.

The following table lists the required hardware. For information about the latest version firmware supported, refer to the current *Release Notes*.

Table 3-7 Required Hardware for the Agilent Detector

Cable	Other Parts Needed
N/A	<ul style="list-style-type: none"> • Network interface card for the LAN (Ethernet) connection

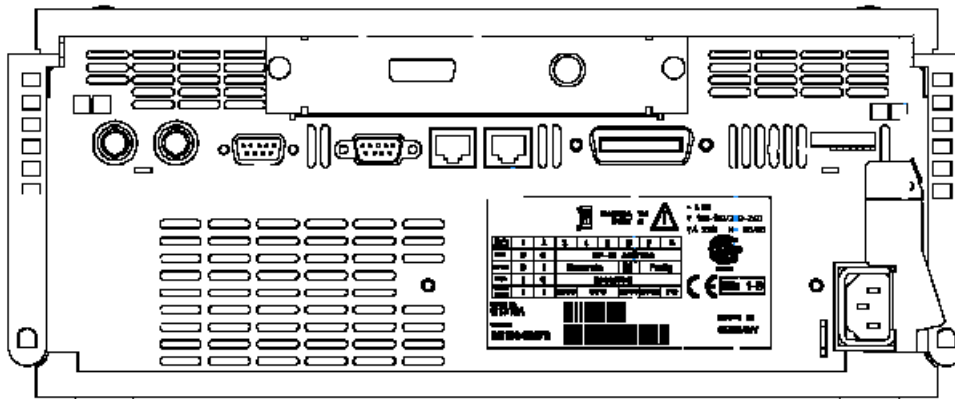
Diode Array Detector

The Agilent 1290 DAD is shipped with an on-board LAN interface. Connect the DAD to the computer using the LAN (Ethernet) cable. Refer to [Configuration of Agilent Devices Through LAN \(Ethernet\) Communication on page 9](#).

Connect the Diode Array Detector to the Computer

1. Shut down the computer.
2. Turn off the diode array detector by pressing the On/Off button.
3. Connect a LAN (Ethernet) cable (Agilent PN G5183-4649) to the back of the Agilent diode array detector. Refer to [Figure 3-3](#).

Figure 3-3 Back of the Agilent Diode Array Detector



4. Connect the other end of the cable to the computer.



WARNING! Electrical Shock Hazard: Refer to the Shimadzu CBM System Controller Safety Instructions before configuring any AC mains-powered equipment.

The SCIEX OS supports the following Shimadzu LC-30 series devices:

Shimadzu Nexera system

- Gradient HPLC pump set (two) (LC 30AD)
- Autosampler (SIL30AC)
- Rack Changer II
- Column oven (CTO-20AC)
- System Controller (CBM-20A)
- Degasser (DGU-20A5)
- Mixer/Tray and Bottles
- PDA/UV detector: SPD-M30A

Shimadzu XR system Prominence

- Gradient HPLC pump set (x2) (LC- 20 ADXR)
- Autosampler (Sil 20 ACXR (temperature control))
- Rack Changer II
- Column oven CTO-20AC column oven
- System Controller CBM-20A
- Degasser DGU-20 A5
- Mixer/Tray and Bottles.
- Detector SPD-20A UFLC UV-VIS Detector
- High-pressure flow-line selection valves. FCV-20AH2/20AH6

The following table lists the required hardware.

Table 4-1 Required Hardware for Shimadzu Devices

Cable	Other Parts Needed
LAN cable (with Prominence devices)	<ul style="list-style-type: none"> Shimadzu fiber optic cables (one for each device connected)

Shimadzu Device Configuration

Use the following controller to connect to and control a Shimadzu HPLC system using the SCIEX OS :

- CBM-20A

The CBM is required for the software to communicate with and control any Shimadzu device. The CBM uses serial or TCP/IP (Ethernet) connectivity, with TCP/IP being the preferred mode of communication.

The following table lists the required hardware.

Table 4-2 Required Hardware for Shimadzu Devices

Cable	Other Parts Needed
LAN cable (with Prominence devices)	<ul style="list-style-type: none"> Shimadzu fiber optic cables (one for each device connected)



WARNING! Electrical Shock Hazard: Refer to the Shimadzu CBM System Controller Safety Instructions before configuring any AC mains-powered equipment.

Configure the Controller

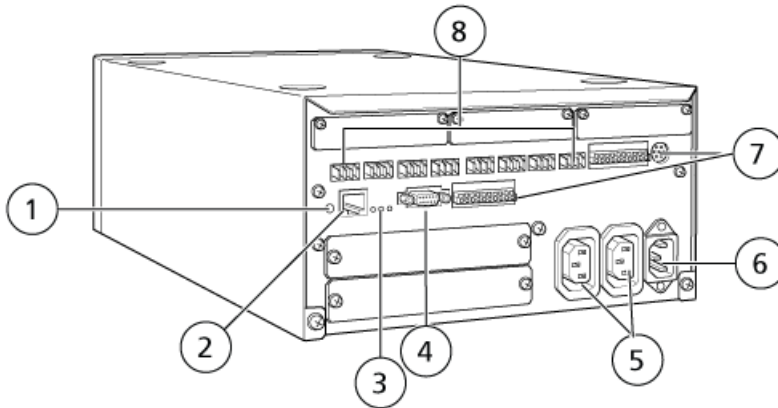
Use the following procedures to configure the controller.

Connect the Controller to the Computer

- Turn off the controller by pressing the On/Off button.

Shimadzu Series Devices

2. Connect the Ethernet cable from the Ethernet port at the back of the controller to the Ethernet port on the computer.



Item	Description
1	Initialization button.
2	Ethernet connector (ETHERNET). Connects to the network.
3	Network LEDs. Show the status of the connection to the network. <ul style="list-style-type: none">• 100M: Turns on when operating at 100 Mbps.• ACT: Turns on when exchanging data.• LINK: Turns on when linked to the network.
4	RS-232C connector. Not supported.
5	AC output connectors. These connectors are for AC power output and are operationally linked to the power switch. They can be used to supply power to . Do not use them for any other application.
6	Power cord connector. Connects to the mains supply.
7	External Input/Output terminals.
8	Remote connectors 1 to 8. Connect to components.

3. Set the IP address in Windows to 192.168.200.1.

Do not set the subnet to 98 or 99.

Connect Devices to the Controller

The autosampler, pump, column oven, UV detector, or PDA detector can be connected to the controller. The PDA Detector requires a switching hub to connect to the controller and the acquisition computer. Refer to the documentation that comes with the devices.

Connect the Devices

1. Turn off the devices by pressing the On/Off button.
2. Turn off the controller by pressing the On/Off button.
3. Connect the fiber optic cable from the device to the back of the controller.
 - Connect the autosampler to fiber optic port 1.
 - Connect pump A to fiber optic port 3.
 - Connect pump B to fiber optic port 4.
 - Connect the column oven to fiber optic port 5.
 - Connect the UV detector to fiber optic port 6.

Configure the Controller for a Newly Attached Device

- Turn off the controller and other devices, wait two seconds, and then restart all devices, turning on the controller last.

Note: The model number for each connected device appears on the System Configuration screen. The message Remote appears on any connected pump.

Revision History

Revision	Reason for Change	Date
A	First release of document.	January 2016