



EXT75DX Turbomolecular Pump

VACUUM SYSTEMS PRODUCT DATA

The BOC Edwards EXT75DX compound turbomolecular pump with integral pump controller; combines an improved ceramic mechanical lower bearing technology with a dry permanent upper magnet bearing in a single package.



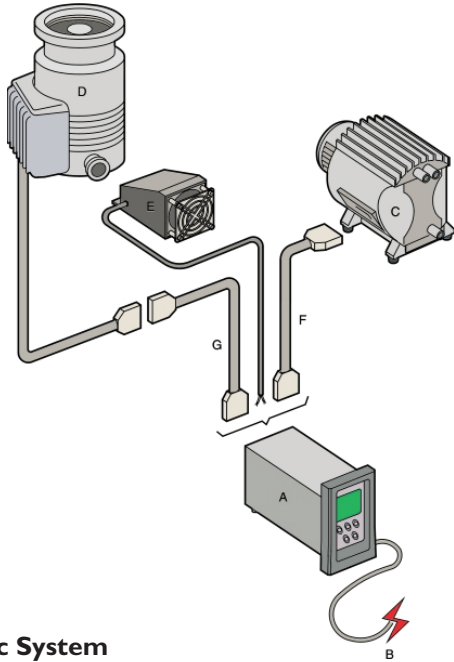
This new improved bearing for lower power consumption and reduced vibration transmission enables the EXT75DX to be used in SEM applications, along with more traditional mass spectrometry and high vacuum applications.

Features and Benefits

- 24V dc pump fully compatible with BOC Edwards TIC Turbo or TIC Turbo Instrument Controllers
- Can be used with customers own 24V power supply
- Programmable power limit settings (default 80W)
 - 50W minimum - for reduced power budget requirement
 - 120W maximum - to enable faster ramp up times
- Automatic vent options (examples)
 - Hard vent when speed falls below 50% (default)
 - Pulsed vent above 50% - for reduced ramp down times
- Electronic braking mode
 - Selectable to further reduce cycle times
- Programmable standby speed for system tuning
- Parallel or serial (or combination) communications modes
- Purge port
- Profibus module available as accessory directly to the EXT75DX pump itself or via TIC controller
- Programmable pump ready signal
 - Can be used to interface to vacuum system e.g. switch on gauge
- Analogue output 0 – 10V
 - Pump rotational speed (default)
 - Pump power consumption
 - Pump temperature
 - Controller temperature

TYPICAL CONFIGURATION

Basic system



Basic System

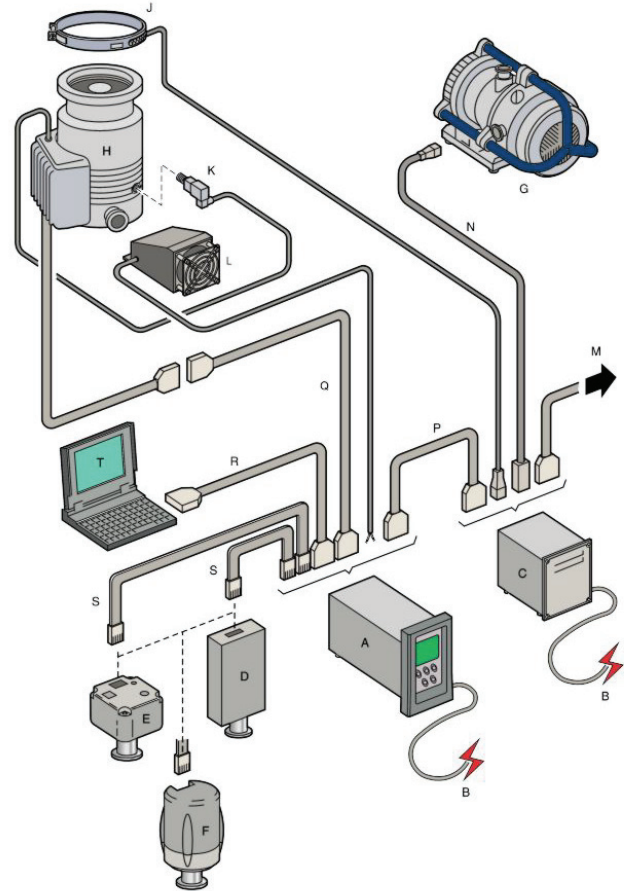
- A TIC 200 Turbo Controller
- B Mains cable (TIC and relay box supply)
- C XDD1 diaphragm pump (24V)
- D EXT75DX ISO63
- E ACX75 air cooler
- F XDD/DX/EXDC extension cable
- G XDD/DX/EXDC extension cable

Ordering Information

| | | |
|----------------------------------|--|-----------|
| Controllers | | |
| TIC100 turbo | | D39711000 |
| TIC200 turbo | | D39712000 |
| TIC100 turbo and instruments | | D39721000 |
| TIC200 turbo and instruments | | D39722000 |
| TIC relay box | | |
| Small backing pump | | D39711805 |
| Instruments & small backing pump | | D39711806 |
| Mains cables | | |
| TIC & relay box UK 2m | | D40013025 |
| TIC & relay box US 2m | | D40013120 |
| TIC & relay box EUR 2m | | D40013030 |
| TIC mains cable IEC320 M/F 2m | | D39700831 |
| Interface cables | | |
| TIC logic interface cable | | D39700833 |
| TIC RS232 interface cable 2m | | D39700834 |
| XDD/DX/EXDC extension cable 2m | | D39700836 |
| Active gauge cables | | |
| 0.5m | | D40001005 |

Other cable lengths also available. Please contact BOC Edwards for further details

Comprehensive system



Comprehensive System

- A TIC200 Turbo & instrument
- B Mains cable (TIC and relay box supply)
- C Relay box
- D APG Pirani gauge
- E AIGX ion gauge
- F AIM inverted magnetron gauge
- G XDS5 scroll pump
- H EXT75DX turbo pump
- J BX70 heater band *
- K TAV5 vent valve
- L ACX75 air cooler
- M TIC logic interface cable
- N TIC mains cable IEC320 M/F
- P TIC logic interface cable
- Q XDD/DX/EXDC extension cable
- R TIC RS232 interface cable
- S Active gauge cable
- T PC with RS232 interface

* For use with water-cooled pumps only

TECHNICAL DATA

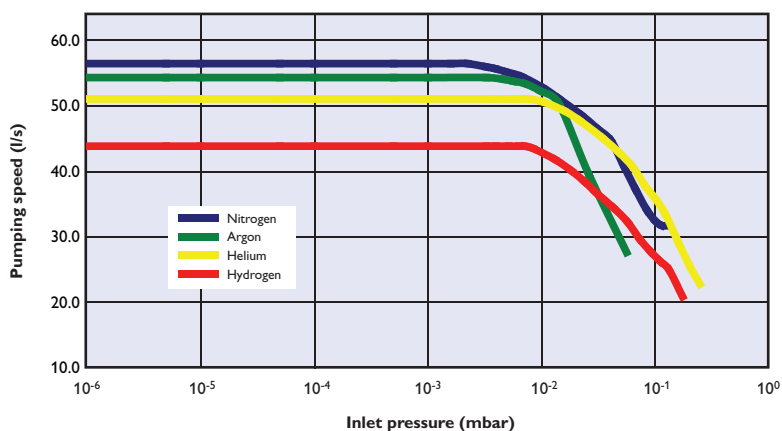
| | |
|--|--|
| Inlet flange | DN40NW, DN63ISO-K, DN63CF or DN100ISO-K |
| Compression ratio | |
| N ₂ | >1 × 10 ¹¹ |
| He | 1 × 10 ⁶ |
| H ₂ | 5 × 10 ⁴ |
| Outlet flange | DN16NW or DN25NW (some options) |
| Interstage port (Hi variants) | DN25NW |
| Recommended backing pump* | E2M0.7 |
| Vent port | 1/8 inch BSP |
| Purge port | 1/8 inch BSP |
| Maximum continuous inlet pressure (light gas pumping) [†] | |
| Water cooling (water at 15 °C, ambient temp at 40 °C) | 2 × 10 ⁻² mbar |
| Forced air cooled, 35 °C ambient | 1 × 10 ⁻² mbar |
| Nominal rotational speed | 90000 rpm |
| Standby rotational speed | Variable from 49500 to 90000 rpm (63000 rpm default) |
| Start time 90% speed [‡] | 110 s |
| Cooling method | Forced air / water |
| Ambient air temperature for forced air cooling | 5 - 35 °C |
| Minimum cooling water flow rate (water 15 °C) | 15 l h ⁻¹ |
| Water temperature range | 10 - 20 °C |
| Maximum inlet flange temperature | 100 °C |
| Operating attitude | Vertical and upright, through to horizontal |
| Noise level at 1 metre | <50 dB(A) |
| Maximum magnetic field | 5 mT |
| Recommended controller | TIC100 turbo or turbo and instrument controller |
| Quiescent electrical power | 10 W |
| Interstage pumping speed (Hi variants) | 4 l s ⁻¹ |

* A larger backing pump may be required for maximum throughput. A suitable diaphragm pump with ultimate <5 mbar may also be used.

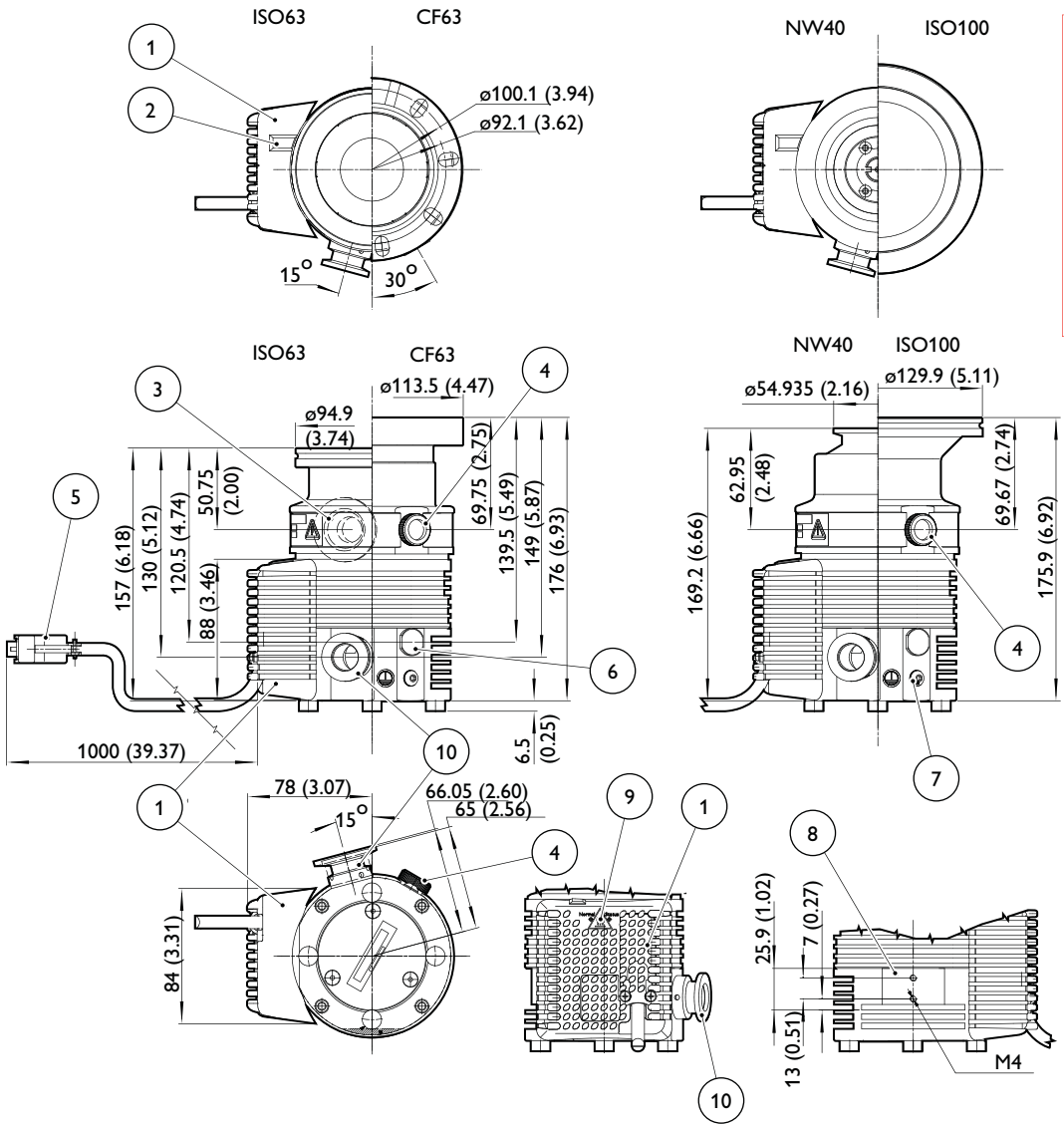
[†] Above this inlet pressure, rotational speed drops to below nominal.

[‡] Power limit set to 80 W.

EXT75DX PUMPING SPEED (WITHOUT INLET SCREENS)



DIMENSIONS



- 1 Electronic control podule
- 2 Podule connector socket
- 3 Interstage port (optional)
- 4 Vent port
- 5 Electrical lead
- 6 Purge port
- 7 Earth connection
- 8 Water cooling block position
- 9 Podule indicator LEDs
- 10 Backing port

ORDERING INFORMATION

| Pump | Inlet Flange | Part Number | Pump | Inlet Flange | Part Number |
|----------------|---------------------|--------------------|----------------|---------------------|--------------------|
| EXT75DX ISO63 | DN63ISO | B72241000 | EXT75iDX NW40 | DN40NW (main) | B72235000 |
| EXT75DX CF63 | DN63CF | B72242000 | EXT75DX ISO100 | DN16NW (interstage) | B72246000 |
| EXT75DX NW40 | DN40NW | B72243000 | EXT75DX ISO63 | DN100ISO (main) | B72248000 |
| EXT75DX ISO100 | DN100ISO | B72245000 | EXT75DX ISO63 | DN25NW (backing) | B72248000 |
| EXT75iDX ISO63 | DN63ISO(main) | B72237000 | Reversed body | DN63ISO-K | B72248000 |
| EXT75iDX ISO63 | DN16NW (interstage) | B72238000 | | | |
| | DN63ISO (main) | | | | |
| | DN25NW (interstage) | | | | |

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