

**CONTROL
TECHNIQUES**



UNIMOTOR HD

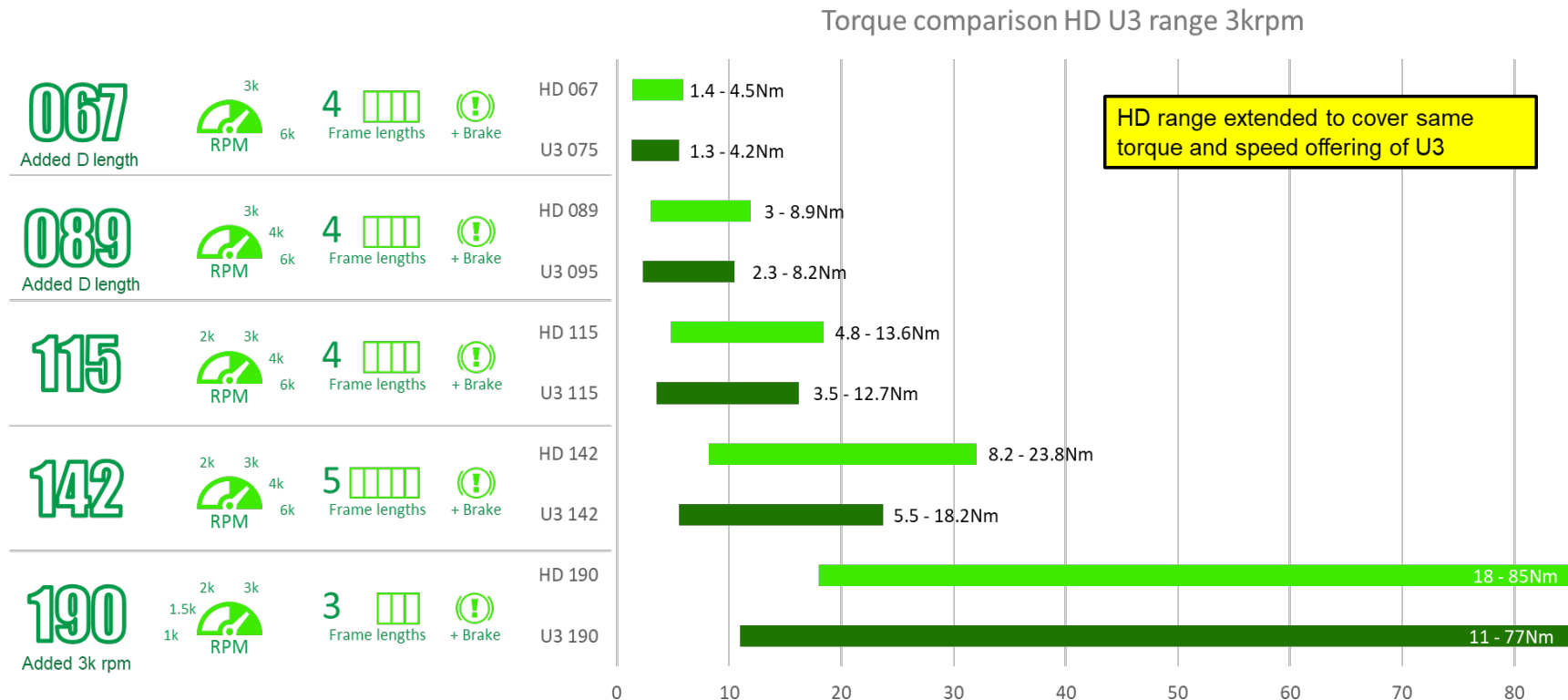
Toolkit November 2022

CONTENTS

- Unimotor hd extended range [03](#)
- Unimotor hd extended range & Unimotor fm end of life [04](#)
- Unimotor hd competitor analysis [05](#)
- Migrating from Unimotor fm to hd [06](#)
- Brochure [07](#)
- Matched motor and drive combinations [08](#)
- Unimotor hd web pages [19](#)
- Servo motor selector [10](#)
- Technical documentation [11](#)
- Case Studies [12](#)
- Success Story Reference List [13](#)

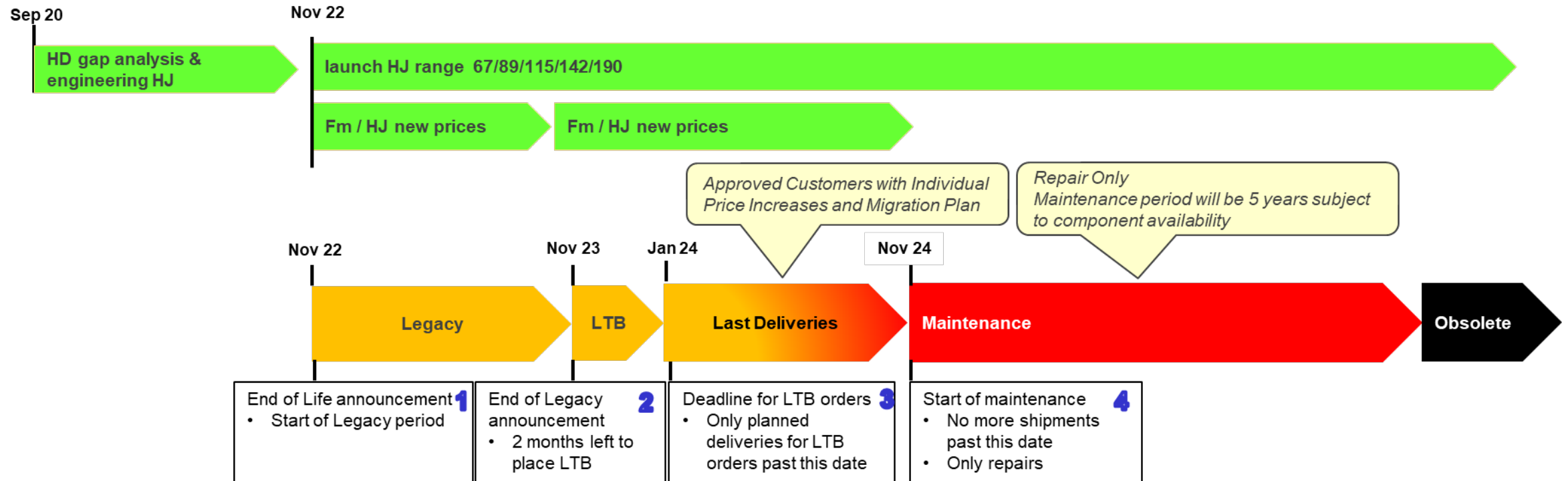
Unimotor hd extended range

- Unimotor hd now fully covers the U3/fm range, the comparison table below shows the current U3/fm and the new hd.
- High inertia option, JSHJ, is available on all frame sizes and lengths.
- See our Rationalised Product Offering below



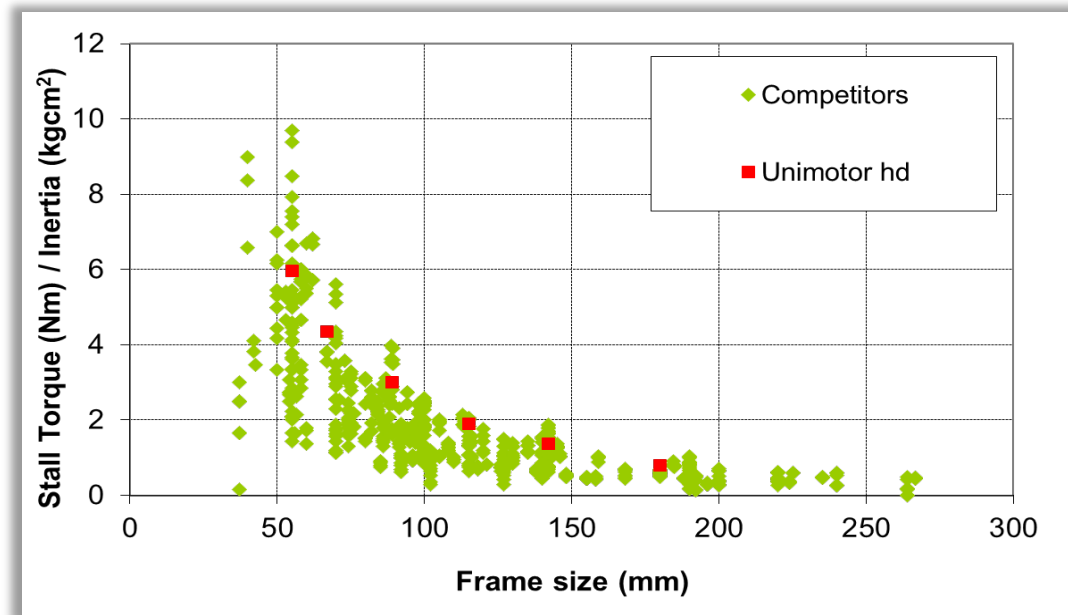
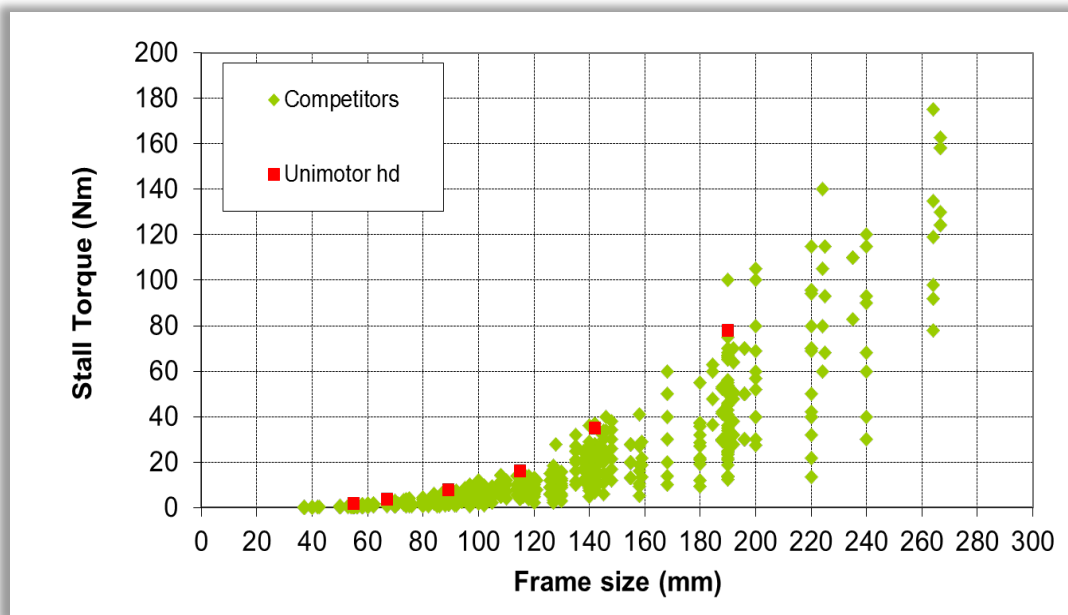
Unimotor hd extended range & Unimotor fm end of life

- With the addition of extra frame lengths, speeds, and a high inertia option; Unimotor hd is now the most comprehensive and competitive servo motor range available.
 - Unimotor fm has now started the end-of-life process, see timeline below for details.
 - Product Management will work closely with the countries with large volume OEMs to assist in the migration:



Unimotor hd competitor analysis

- Unimotor hd is the best-in-class servo motor, in terms of:
 - Torque density & Acceleration when used for high dynamics application.



Best in Class

Torque density

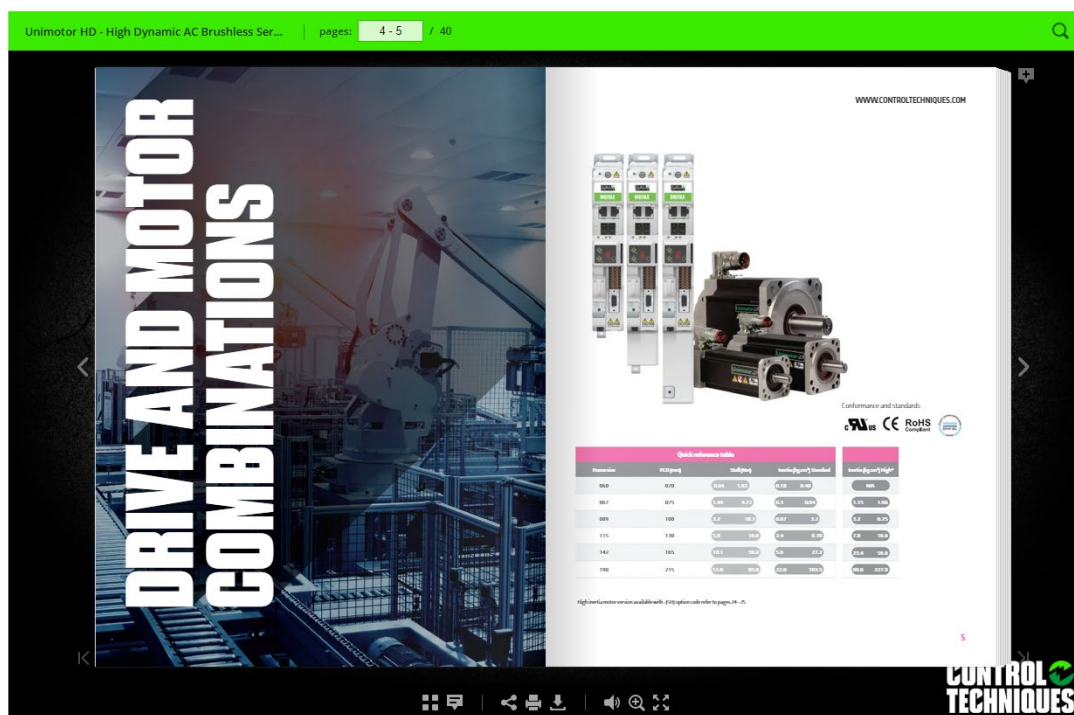
Best in Class

Acceleration

- To support customers who are migrating from Unimotor fm to hd, the following presentation is available.
- To view, click on the icon below.



- The Unimotor hd brochure is available to download from the web and the DAM.
- Also, there is a flip book version available.
- Click on the graphics to access these.



- Drives and motors from Control Techniques are designed to function as an optimized system. Unimotor hd is the perfect partner for Unidrive & Digitax.
- To find out more about these drives, click on the brochure language codes below the graphics aside.



[EN](#), [IT](#), [DE](#), [ES](#), [CS](#),
[TR](#), [PL](#), [FR](#), [ZH](#), [RU](#)



[EN](#), [IT](#), [DE](#), [ES](#),
[TR](#), [FR](#), [ZH](#)

- Unimotor hd exists on the Control Techniques website, in multiple languages.
- Click on the language codes below to view:
 - [EN](#), [DE](#), [IT](#), [ES](#), [TR](#)

The screenshot displays the Control Techniques website, a Nidec brand. The header includes the company logo, navigation links for Worldwide Locations, About Nidec Corp, Careers, English - Global, and a search bar. Below the header, there are links for Products, Industries, Service and Support, News and Media, About Us, and Downloads. The main content area features the title "Unimotor hd - Pulse duty servo motor" with a subtitle "Designed for high dynamic applications requiring hard accelerations and decelerations". A sidebar on the left lists various products, including Drive Setup, AC Drives and Motors, Servo Drives and Motors, Digitax HD Drives, Digitax SF Drives & Motors, Unidrive M700, AC Servo Motors, Unimotor fm, Unimotor fm Fan Blown, Unimotor hd, Servo Drives Superseded, DC Drives and Motors, Functional Safety, Integration Products, and Integration Options. The main content area also includes a "Unimotor hd Servo Motors" section with specifications (0.72Nm to 85.0Nm (255.0Nm peak), 060 to 190 Frames) and a "High Dynamic AC Brushless Servo Motor" section. A "Servo Solutions Series" section shows a row of servo motors. On the right, there are links to "Find Out More" (Worldwide Locations, Contact Us) and "Click Through The Brochure". A "Case Studies" section mentions "Variable Speed Drives Save the Day at Danish Dairy".

CONTROL TECHNIQUES A NIDEC BRAND

Worldwide Locations | About Nidec Corp | Careers
English - Global

Search

Products | Industries | Service and Support | News and Media | About Us | Downloads

Contact Control Techniques | Our Partners

Control Techniques / Control Techniques Products / Servo Drives and Motors / AC Servo Motors / Unimotor hd

Share This Page: [in](#) [twitter](#) [email](#) [facebook](#) [print](#)

Unimotor hd - Pulse duty servo motor

Designed for high dynamic applications requiring hard accelerations and decelerations

Products

- Drive Setup
- AC Drives and Motors
- Servo Drives and Motors
 - Digitax HD Drives
 - Digitax SF Drives & Motors
 - Unidrive M700
 - AC Servo Motors
 - Unimotor fm
 - Unimotor fm Fan Blown
 - Unimotor hd
- Servo Drives Superseded
- DC Drives and Motors
- Functional Safety
- Integration Products
- Integration Options

Unimotor hd Servo Motors

0.72Nm to 85.0Nm (255.0Nm peak)
060 to 190 Frames

WANT TO FIND OUT MORE?
Click here to contact us

High Dynamic AC Brushless Servo Motor

Unimotor HD is a high dynamic brushless AC servo motor range designed for use in pulse duty applications where rapid acceleration and deceleration are required. The motors are available in frame sizes from 060 to 190.

Servo Solutions Series

Find Out More

- Worldwide Locations
- Contact Us

Click Through The Brochure

Case Studies

- Variable Speed Drives Save the Day at Danish Dairy

- Unimotor hd can be purchased via the Control Techniques Customer Portal.
- To access this, click on the graphic aside.

CONTROL TECHNIQUES NIDEC IND.AUT. IBERIA, S.A. gavin.sevier@mail.nidec.com [Logout](#)
Company: [CT GB OU MFG](#)

[HOME](#) [PROFILE](#) [PREFERENCES](#)

SERVO MOTOR SELECTOR

Motor Family	HD - Unimotor HD ▼
Frame Size	- Please Select ▼
Motor Voltage	ED - 220V ▼
Stator Length	- Please Select ▼
Rated Speed	- Please Select ▼
Brake	- Please Select ▼
Connection Type	- Please Select ▼
Output Shaft	A - Key ▼
Feedback Device	- Please Select ▼
Thermistor	- Please Select ▼
Part Number	

- The latest Unimotor hd Installation Manual can be downloaded from [here](#).

Installation

CAUTION
High voltage

Before you attempt any installation operations, please make sure that the voltage supply to the motor is off, and the cables are disconnected.

During operation the motor surface temperature may exceed 100°C. Ensure that temperature sensitive devices do not touch the motor surface.

CAUTION
Temperature

Mount the motor on a suitable thermally conductive surface as this will assist in reducing the motor body temperature and allow sufficient space around the motor for the free circulation of air.

Ambient temperatures of between 0°C and 40°C are acceptable.

If the thermal path via the front flange is impeded, de-rate the motor performance.

Please contact your local Drive Centre or Distributor for further details and assistance.

Mechanical Installation

Unimotors are manufactured in accordance with the standards stated in the EC declaration of conformity as well as IEC 60072-1 (Dimensions and output series for rotating electrical machines) IEC 60072-1 Type N (Normal class) ISO 1940-1 (Balancing to G6.3) ISO 21940-32 (half key convention).

Bolt the motor flange to a substantial metal plate.

Correctly locate the registration spigot.

Unimotors are sealed to IP65, excluding the front face.

The output shaft should be correctly aligned with the driven load.

It is inadvisable to fit a third bearing to the shaft.

Ensure the output key is correctly seated before mounting keyed components to the shaft.

If a keyed Unimotor is run without a coupling fitted, then to reduce risk of injury, remove or tape the output key.

Do not use a hammer to fit components to the shaft; this will damage the motor bearings and the feedback device and invalidate the warranty.

Use a bolt and washer to draw components onto the motor shaft using the tapped hole in the end of the shaft.

Remove components using a suitable gear puller.

The maximum load ratings (Radial and Axial) should not be exceeded, see tables below for details.

Timing belts should never be over tightened. Refer to belt manufacturer for details.

During connection care must be taken to ensure suitable sealing for cable outlets.

The conductor size for the Power cable should be selected according to the motor stall current.

Allow sufficient room for access to the cables and connectors. The minimum cable bend radius is 10 x the cable diameter.

If the Unimotor rating label is obscured after mounting, affix the duplicate rating label to a visible part of the motor or machine.

Please contact your local Drive Centre or Distributor for further details and assistance.

ATEX Unimotors and fm special conditions: The motor front face must be bolted to the machine in such a way that the IP 65 protection is maintained.

If the motor was exposed to airline pressure at 7 bar the motor shaft seal should be checked for damage and replaced if necessary.

Maximum Axial Force

Maximum Axial Force (F)

Frame size (mm)	fm	hd
075/067	900 N	650 N
095/080	850 N	1000 N
115	950 N	1200 N
142	950 N	950 N
190	900 N	900 N
250	1450 N	-

The axial force written in the table above is the maximum axial force allowed on the shaft. If the axial force put on the shaft exceeds this force, there is a high probability that the shaft will move compared to the bearing.

If the axial force on the shaft exceeds the one specified in the table, the motor is not under warranty.

Mechanical Dimensions

Shaft diameter (D)	Tapped hole (E)	PCD (C/A)	Register (C/B)	Mounting Bolt	fm motor frame size	PCD Code	hd motor frame size
63.0	40 (f6)	M5	N/A	063	055		
66.7	60	M5	075	066	N/A		
70.0	70	M5	065	070	N/A		
75.0	60 (f6)	M5	075	075	067		
80.0	60 (f6)	M5	075	080	N/A		
85.0	70 (f6)	M6	075	085	N/A		
98.43	73.025	M6	095	098	N/A		
100.0	80 (f6)	M6	095	100	089		
115.0	95 (f6)	M8	095	115	N/A		
115.0	95 (f6)	M8	115	115	N/A		
125.73	110	M8	115	125	N/A		
130.0	110 (f6)	M8	115	130	115		
145.0	110 (f7)	M8	115	145	N/A		
149.23	114.3	M8	142	149	N/A		
165.0	130 (f6)	M10	142	165	142		
215.0	180 (f6)	M12	190	215	190		
300.0	250 (f6)	M16	250	300	N/A		

Electrical Installation

CAUTION
High voltage

Do not connect or disconnect with power on!

Switch off the drive for at least two minutes before disconnecting, or connecting the motor.

Do not disconnect or connect the cables with the power on.

The Unimotor contains a permanent magnet rotor. A voltage is generated at the motor terminals when the rotor is turned. If the motor is back driven for any reason then care must be taken to avoid electric shocks.

The Unimotor typically operates at a switching voltage of 600-700V d.c, even when stationary.

Ensure the earth wire is correctly fitted to the motor connecting pin and earth points.

Connect an earth bond strap, minimum 4mm², from the machine to the motor body.

Fit the strap to the front flange of the motor in such a way that it will not interfere with the mounting of the motor.

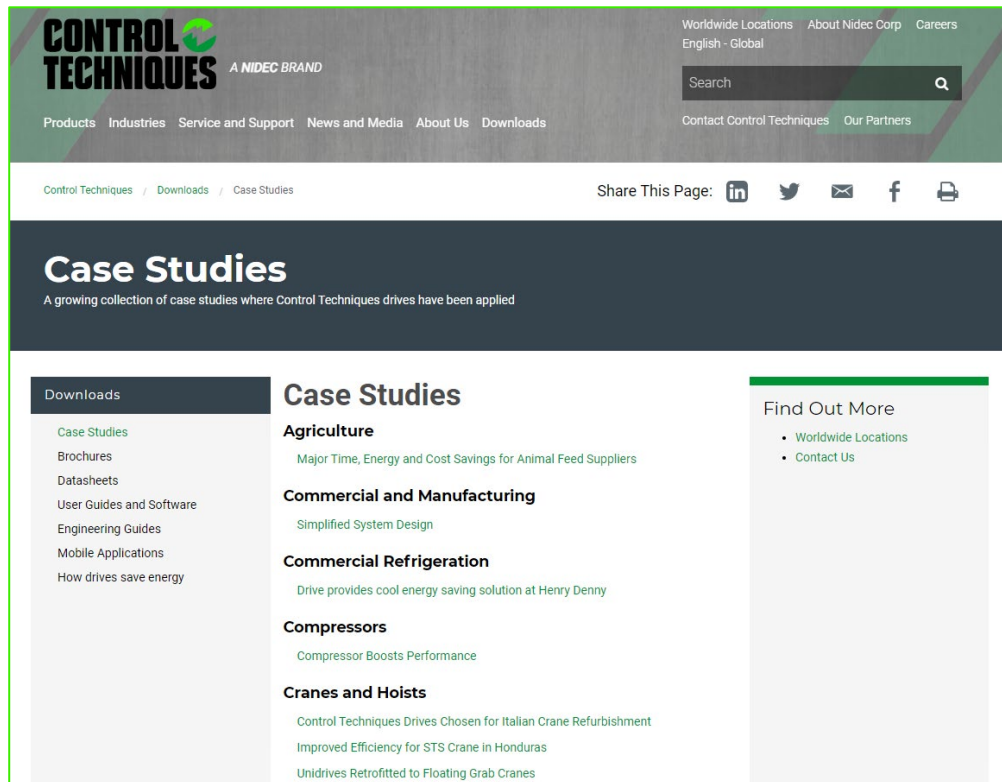
Unimotor Series



Installation Manual

Website:
www.controltechniques.com

- There are many case studies that showcase the benefits of Unimotor hd which can be found on the website and in the 100 book.
- Click on the icons below to view.



Success Story Reference List

- For Unimotor hd related case studies, success stories and customer references, refer to the [Success Story Reference List](#).
- Please note:** the reference list is for Control Techniques employees only.

Nidec SharePoint

Home covid-19 EMEA Global HR Global Marketing Global Quality and Service Information Technology Legal PMO R & D

CONTROL TECHNIQUES Marketing Communications

Home Automate View options

Org Chart

Marcomms Monthly Rou...

Success Stories Reference...

Global Marketing Home

Edit

Search results for "HVAC"

Company Name	Country	Sales Contact	Products used	Competition	Industry	Application(s)	Additional Info (Optional)	Internal Only?	Webpage Link
Smartech International		Chong, Justin (ACIM/OS/N)		Schneider Electric, ABB	HVAC/R and process cooling	Compressors, Cooling	Digistart & Modbus RTU. Key success factor was the 2 year warranty, existing stock and pricing. This was used in Hitachi Centrifugal chillers in the University Malaya Medical Center.	No	
Civil and Marine's	United Kingdom		Unidrive SP		HVAC/R and process cooling	Energy Saving, Extraction	At Civil and Marine's Middlesbrough plant, blast furnace slag, a waste product from the Corus steelworks next door, is ground into a fine powder called Ground Granulated Blast Furnace Slag (GGBS) used to enhance	No	
Corus Steelworks	United Kingdom		Unidrive SP		HVAC/R and process cooling	Cooling	The installation of variable speed drives for fan control in a cooling tower at Teesside Power Station is reducing downtime, as well as giving the potential for improving	No	https://acim.nidec.com/dri-techniques/downloads/cas-techniques-drives-continuc-corus-steelworks
Domina Inn and Conference Centre	Netherlands		Affinity		HVAC/R and process cooling	Water	Domina Inn and Conference Centre, located between Rotterdam airport and the city centre, features a pioneering sprinkler system that uses groundwater pumped up from a sand	No	
Hidroinženiring D.O.O.	Slovenia		Unidrive SP		HVAC/R and process cooling	Ventilation, Monitoring	Production at Slovenia's premier cement producer, Hidroinženiring d.o.o. of Ljubljana, has been assured with the installation of a drive and motor supplied by Control	No	
Mark Eire BV	Ireland		Commander SK		HVAC/R and process cooling	HVAC	Mark Eire BV is Ireland's leading manufacturer of a wide range of standalone and integrated air handling units and heaters for commercial and industrial premises. Game designers of	No	https://acim.nidec.com/dri-techniques/downloads/cas-marks-for-hvac-drives

ROLES AND RESPONSIBILITIES

Name	Email	Job Title	Responsibility
Jeremy Wilkinson	Jeremy.Wilkinson@mail.nidec.com	Global Product Manager	Servo Motors
Gavin Sevier	Gavin.Sevier@mail.nidec.com	Head of Launch & Campaigns	Global launch & campaign planning

CONTROL TECHNIQUES

Nidec
All for dreams