



SPIRADRIVE® EC

Index and coupling rings

- > High Torque
- > High Precision
- > Accurate indexing
- > Precise repeatability

DAVALL

Driven By Quality

Spiradrive® EC Index and coupling rings

A Unique Design

The patented Spiradrive® EC coupling or index ring set consists of two halves with each being a mirror image of the other. Depending on the outside diameter of the Spiradrive ring, it can be manufactured with 20 to as many as 3000 teeth or more. When in intimate contact, the teeth of one member fit into the spaces of the other member so that the convex side of a tooth contacts the concave side of the tooth of its opposite member. These uniformly spaced curved teeth provide a positive high strength coupling when held in tight mesh. As a result, a Spiradrive® EC ringset, whether used as a precise indexing device or as a power transmitting coupling, forms a torsionally rigid, zero backlash truly self-centring interface.



Benefits

Patented curved tooth design provides excellent cam action in and out of mesh, making Spiradrive® EC index rings truly self-centring, and forming a rigid zero backlash interface. Spiradrive® end couplings allow for a hub extension on the tooth side of one coupling half (not possible on radial tooth face type couplings).

Full flank tooth contact provides an extremely rigid or stiff coupling interface capable of transmitting very high loads.

Extremely high numbers of teeth enable Spiradrive® EC ring sets to be used in precise indexing applications calling for angular indexes of less than one degree with true position accuracy within +3 seconds of arc.

Continuous machining of teeth provides uniformity of tooth spacing resulting in angular position repeatability of 1 micron or better, and improving with use.

Variable tooth geometry (number of teeth, size and pressure angles) helps meet specific performance requirements; full radius tooth tips promote easier tooth engagement, and the varying of pressure angles can increase or decrease separating forces.

Choice of materials- Spiradrive® EC ring sets can be made from virtually any solid material to meet customer performance and budget objectives.

"Task Specific" design capability provides custom solutions to a variety of applications.



Uses

A Spiradrive® EC ring set can be used as a precise indexing device or as a face type coupling. While Spiradrive® EC rings are useful in many applications, they are particularly valuable for these requirements:

1. Where space and/or weight limitations do not allow a conventional shaft coupling.
2. Where keys or splines are not sufficient for the torque load, or require excessive axial clearances for component assembly and disassembly.
3. Where accurate finite incremental indexing of one member with respect to other is required.
4. Where quick disengagement is required.
5. Where maximum rigidity is required.
6. Where positive engagement of two components must also be on a common centre.



Advantages

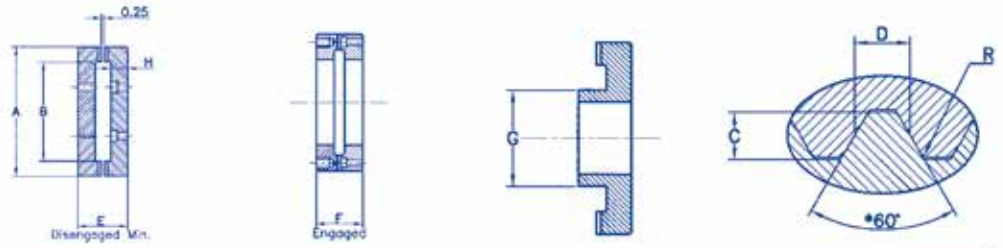
Spiradrive® EC rings offer these advantages:

- For indexing, Spiradrive® EC's curved teeth provide excellent cam action in and out of mesh.
- Spiradrive® EC couplings make possible extremely short axial disengaging distances.
- Our full flank tooth contact maximises stiffness.
- Full radius tooth tips provide for easy engagement.

This design leaflet is provided to furnish the design engineer with preliminary information for the specifications of Spiradrive® EC coupling and index rings. Our engineering personnel are on call, ready to provide technical assistance through all phases of your design program.

For more information visit www.davall.co.uk

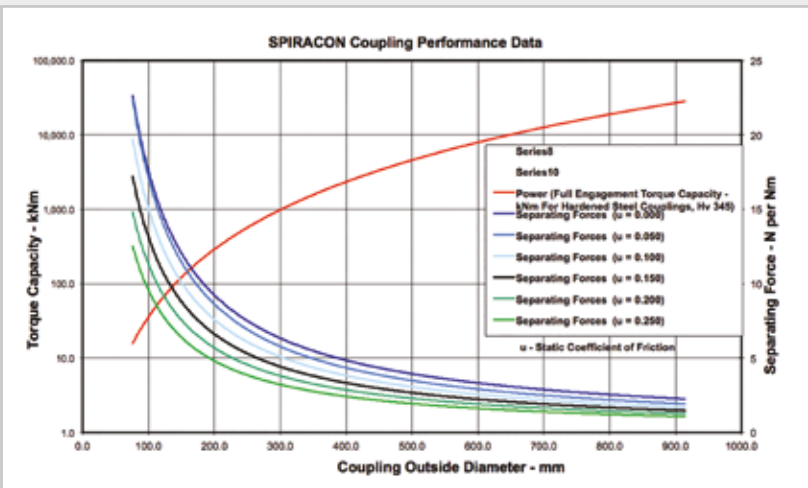
Spiradrive® EC is a registered trademark of Davall Gears Ltd



Dimensions

Coupling OD A	No Of Teeth	I.D. B	Tooth Depth C	Normal Tooth Thickness D	Axial Movement E-F	Max Hub Dia G	Min Thickness H	Full Engagement Torque Capacity - kNm "For Hardened Steel Couplings, Hv 345"
76.2	30	63.5	2.794	2.489	2.769	44.0	12.7	12.8
76.2	60	63.5	1.422	1.219	1.676	46.8	12.7	12.8
76.2	90	63.5	0.965	0.787	1.067	47.7	12.7	12.9
114.3	30	88.9	4.140	3.708	4.394	58.0	19.1	55.6
114.3	60	88.9	2.083	1.803	2.108	67.6	19.1	55.2
114.3	90	88.9	1.397	1.194	1.473	69.1	19.1	55.6
114.3	120	88.9	1.067	0.889	1.321	70.1	19.1	56.1
152.4	60	114.3	2.743	2.388	2.997	87.9	25.4	144.8
152.4	90	114.3	1.829	1.575	2.083	89.6	25.4	145.2
152.4	120	114.3	1.397	1.168	1.651	91.3	25.4	146.2
152.4	180	114.3	0.965	0.787	1.219	93.1	25.4	148.7
203.2	60	155.6	3.632	3.200	3.556	121.0	31.8	322.9
203.2	90	155.6	2.438	2.108	2.438	124.3	31.8	323.0
203.2	120	155.6	1.854	1.575	1.880	126.9	31.8	324.5
203.2	180	155.6	1.245	1.041	1.346	128.7	31.8	327.9
203.2	270	155.6	0.864	0.686	0.965	130.5	31.8	334.5
304.8	90	241.3	3.607	3.175	3.531	194.0	50.8	969.2
304.8	120	241.3	2.718	2.362	2.692	197.2	50.8	970.4
304.8	180	241.3	1.829	1.549	1.880	200.5	50.8	975.9
304.8	270	241.3	1.245	1.041	1.346	203.8	50.8	988.5
304.8	360	241.3	0.940	0.762	1.067	205	50.8	1,002.3
609.6	90	476.3	7.188	6.375	6.858	392	88.9	8,090.9
609.6	120	476.3	5.436	4.775	5.207	407	88.9	8,121.7
609.6	180	476.3	3.658	3.175	3.556	421	88.9	8,161.1
609.6	270	476.3	2.438	2.108	2.464	427.1	88.9	8,178.0
609.6	360	476.3	1.854	1.575	1.905	430.8	88.9	8,218.5
609.6	540	476.3	1.245	1.041	1.346	434.6	88.9	8,316.6
609.6	720	476.3	0.965	0.787	1.067	438.3	88.9	8,438.2
914.4	180	711.2	5.334	4.674	5.131	585.9	127.0	27,347.3
914.4	270	711.2	3.607	3.099	3.505	611.6	127.0	27,501.0
914.4	360	711.2	2.718	2.311	2.692	620.5	127.0	27,612.0
914.4	540	711.2	1.829	1.549	1.880	629.5	127.0	27,857.7
914.4	720	711.2	1.397	1.143	1.473	638.6	127.0	28,148.7

All dimensions in mm



Performance

All statements, technical information and recommendations are based on tests we believe to be reliable and accurate, however; it is not guaranteed for the Buyer's application. Buyer shall determine the suitability of the product for the intended use.



Davall Gears
Custom gear manufacture



Davall Stock Gears
Transmission products off the shelf



Spiradrive® and Spiradrive® EC
Zero backlash gears and gearboxes



Design Consultancy
Bespoke Gearbox Design



Mollart Universal Joints
Torque Tubes, Articulation & Expansion Joints

Quality

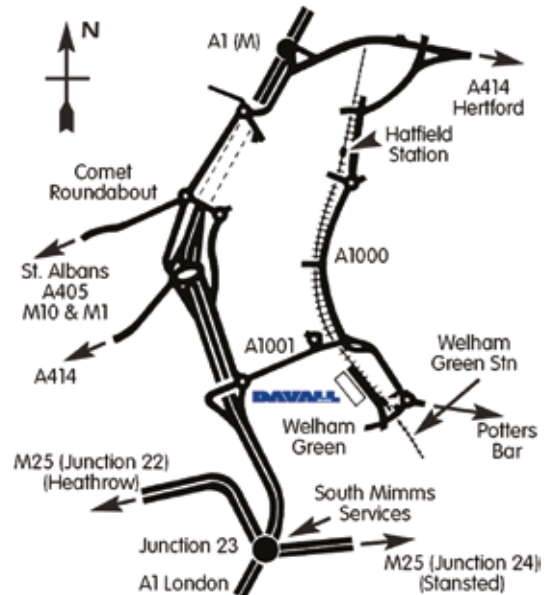
Davall operates a fully approved quality system which meets the requirements of ISO 9001-2008, AS9100, NADCAP and the approval of many notable prime contractors in the aerospace and defence industry.



NOTE:

We reserve the right to make changes and corrections without notice. Every effort has been made to provide accurate technical and product information. The company disclaims responsibility for any error or omission regarding technical and product information published.

Customers are advised to confirm 'fitness for purpose' for their specific application by suitable testing.



Challenger Tank Photograph " Author: Cpl Paul (Jabba) Jarvis RLC (open-government-licence v1.0)

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Davall Gears

Travellers Lane, Welham Green, Hatfield, Hertfordshire AL9 7JB.
Telephone: 01707-283100 Fax: 01707-283111

info@davall.co.uk | www.davall.co.uk