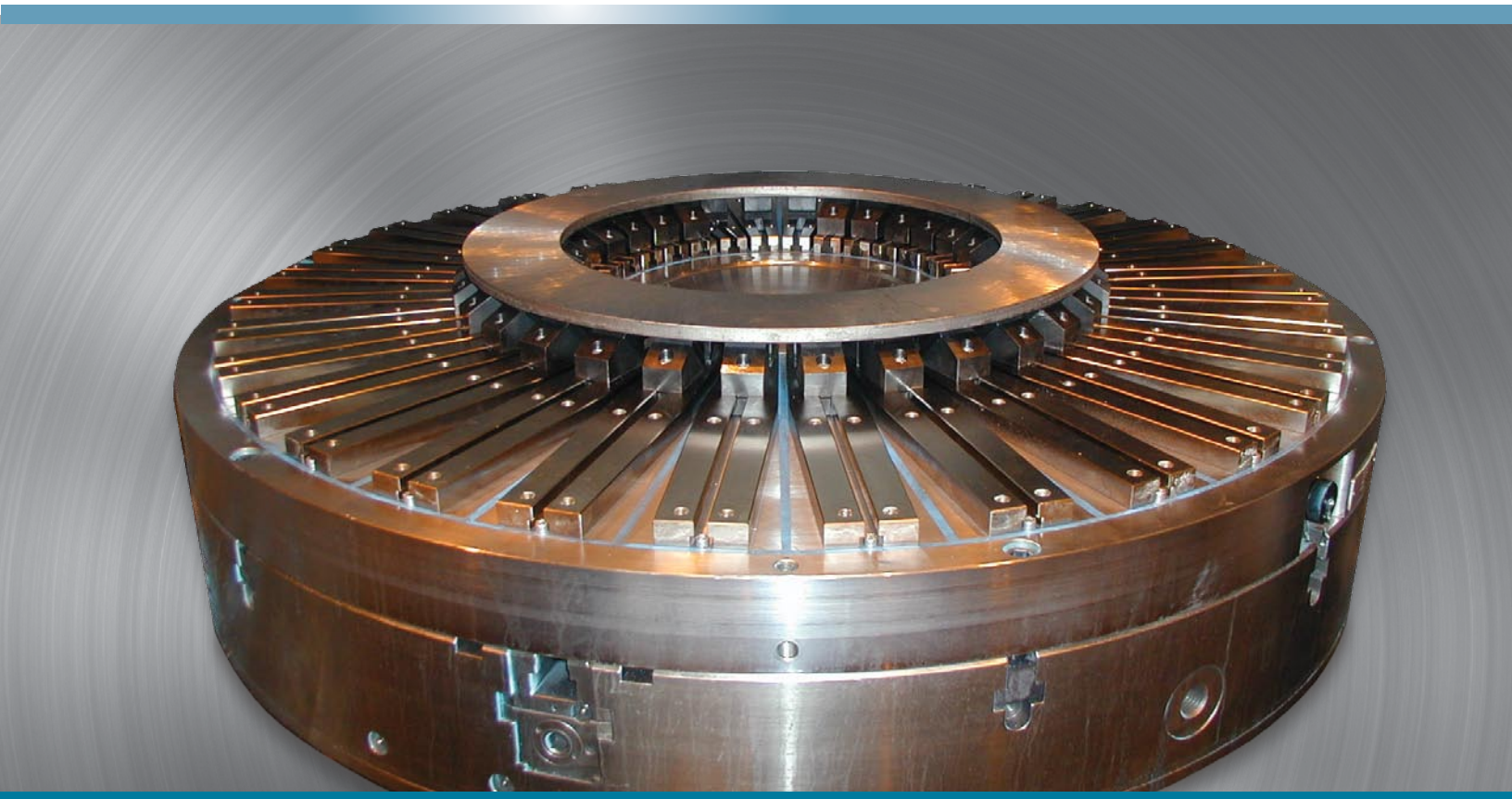
RD-RADIAL

Electrically-Switched, Permanent-Magnet,
Radial-Pole Chucks for rotary applications



OBSTRUCTION-FREE ACCESS | DISTORTION-FREE CLAMPING

Concentricity | Flatness | Circularity

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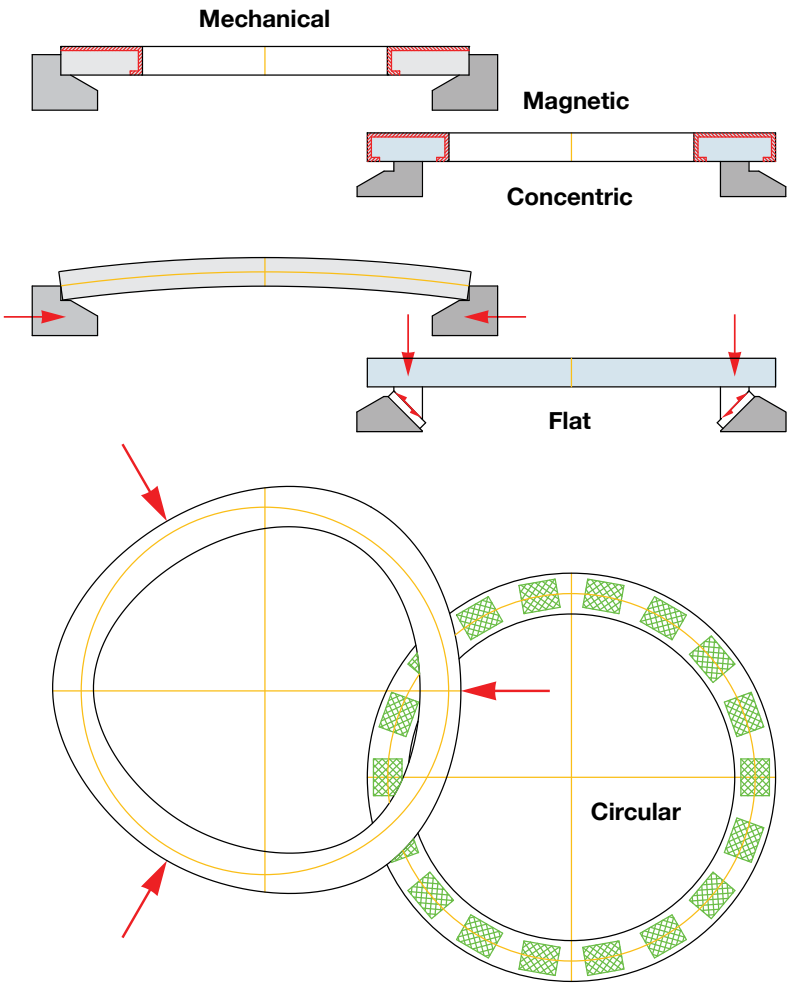
Radial-Pole Magnetic Chucks – the basic reasons why…

Radial pole magnetic chucks have North-South magnetic poles arranged like the spokes of a wheel – grip is from "pole extensions" contacting the bottom face of the part only.

Compared with traditional mechanical jawed chucks for rotary operations, the magnetic solution offers some unique benefits -



Reason # 1 – Obstruction-Free Access

With any form of mechanical chuck, pressure is applied across the part with chuck jaws.

The chuck jaws obstruct – full ID / OD tool access is not possible in a single clamping.

With a radial pole magnet, grip is generated on the bottom face of the part only with the part raised on "pole extensions".

Result is obstruction-free access:

- ID and OD finished in one Operation,
- Concentricity - Period!

Reason # 2 – Distortion-Free Clamping

Mechanical chucks grip the part by squeezing. Squeeze a disc, create a cone.

Squeeze a ring, create an ovoid.

On the magnetic chuck, the part is not squeezed and with self-shimming pole extensions, even warped parts are not pulled.

Result is distortion free clamping:

- Round-stays-Round,
- Flat-stays-Flat, and
- Warped-cuts-Flat.

Self-Shimming Magic…

Self-shimming "pole extensions" are split at 45° – they slide up/down to form-fit the part.

This shimming movement is automatic – when the chuck is magnetized, everything locks without "pulling".

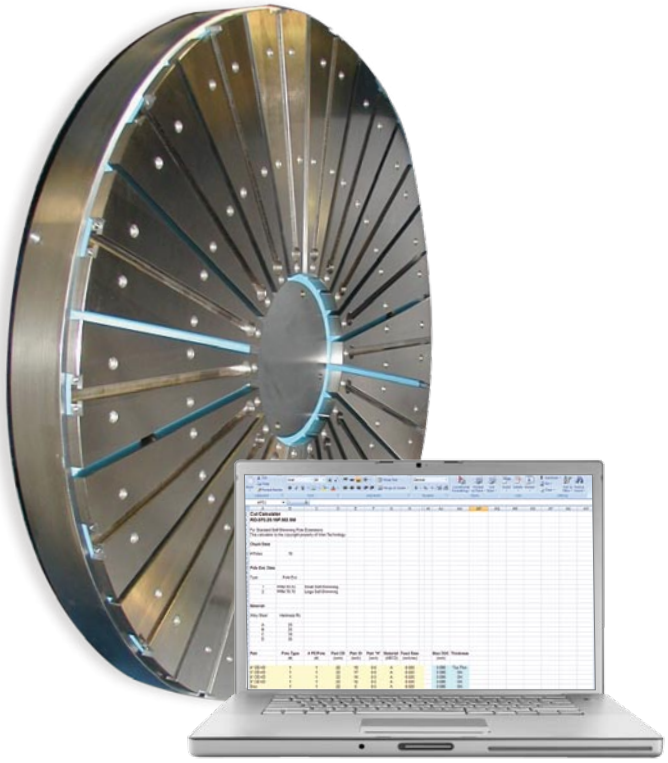
Warped plates can be machined flat – just load on the magnet, magnetize and cut – flat within 0.002"/40" is common!

Magic!

RD-Radials – pure performance…

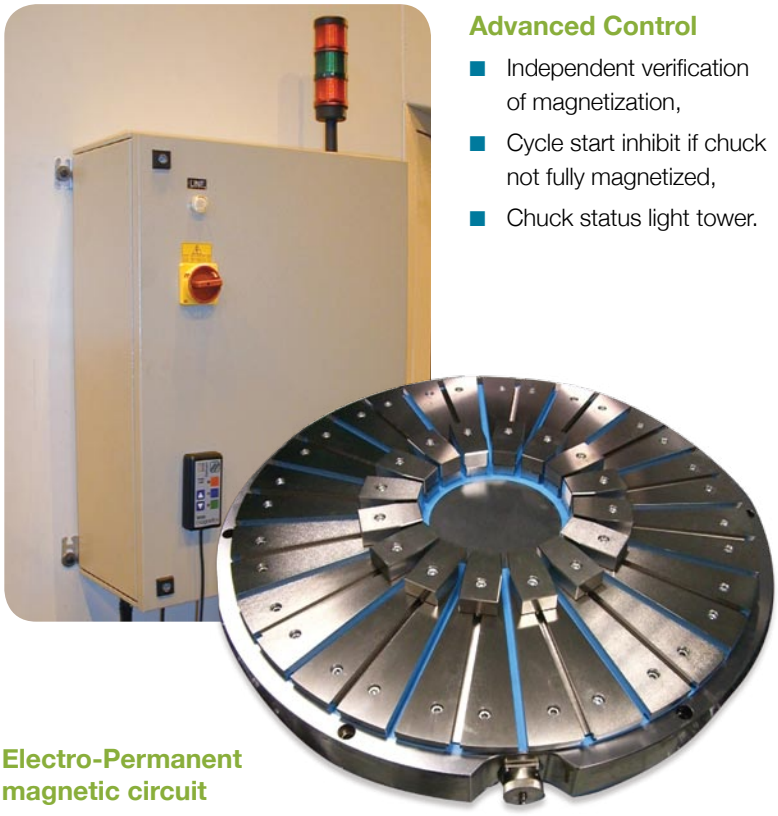
When accuracy and ID / OD access are critical factors, radial pole magnetic chucks excel and if the part is flexible – thin discs and thin-walled rings – it is often the case that the magnetic radial chucks will provide better holding power than possible with conventional mechanical chucks.

RD-Radials are engineered with safety, performance and durability built-in –



Cut-Calculation

- Safe cutting parameter calculator,
- Application specific safety tool.

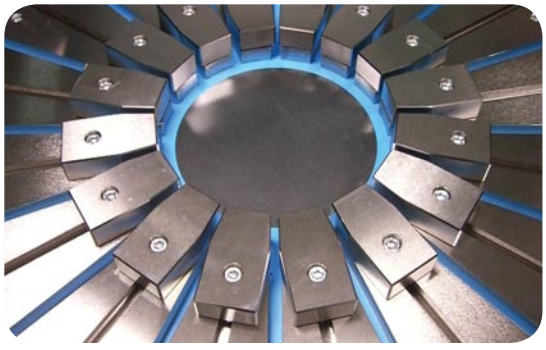


Advanced Control

- Independent verification of magnetization,
- Cycle start inhibit if chuck not fully magnetized,
- Chuck status light tower.

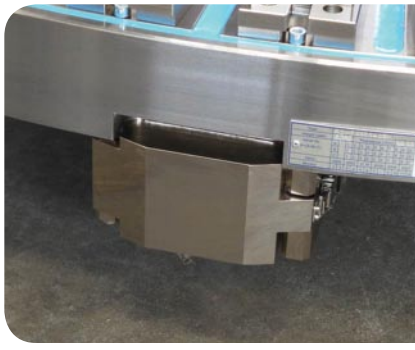
Electro-Permanent magnetic circuit

- Permanent magnets hold part,
- If power fails, the chuck will not let go.



Pole Extensions

- Integral part of the RD Radial chuck design
- Mounted in T-slots, adjust for diameter
- Fixed version for flat parts, machinable for tool clearance
- Self-shimming for warped parts – distortion free clamping



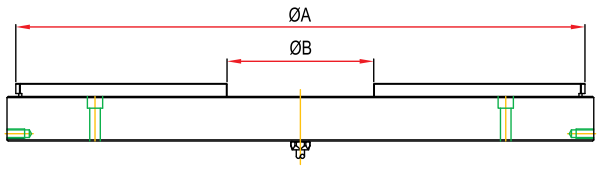
Electrical

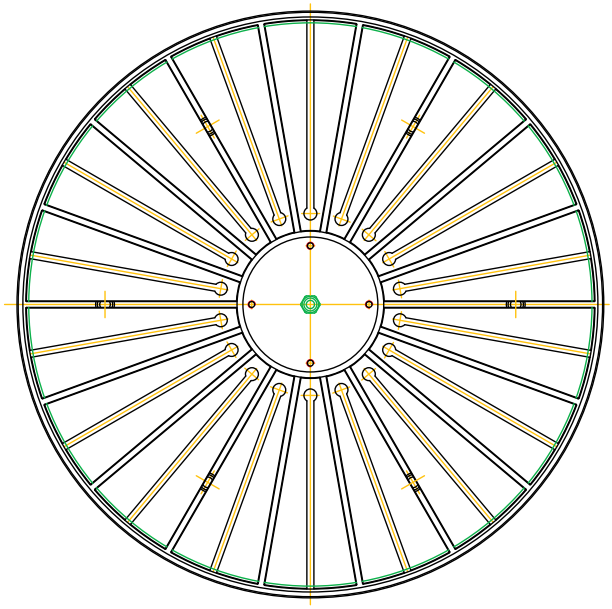
- Since electro-permanent circuit only requires electrical power during switching, the chuck can be disconnected during use
- Rotary electrical couplings facilitate integration
- External connectors facilitate retro-fits

RD-Radials – customized standards…

The RD series radial pole chucks are “built-to-order” giving the required flexibility to match the chuck to both the application and machine.

Code	A (inchØ)	B (inchØ)	Poles (#)
RD.060.020.16P.AABB	24	8	16
RD.070.020.16P.AABB	28	8	16
RD.080.020.16P.AABB	32	8	16
RD.060.025.18P.AABB	24	10	18
RD.070.025.18P.AABB	28	10	18
RD.080.025.18P.AABB	32	10	18
RD.090.025.18P.AABB	36	10	18
RD.100.025.18P.AABB	40	10	18
RD.125.025.18P.AABB	49	10	18
RD.150.025.18P.AABB	59	10	18
RD.125.050.24P.AABB	49	20	24
RD.150.050.24P.AABB	59	20	24
RD.175.050.24P.AABB	69	20	24
RD.125.075.36P.AABB	49	30	36
RD.150.075.36P.AABB	59	30	36
RD.175.075.36P.AABB	69	30	36
RD.175.100.42P.AABB	69	39	42
RD.200.100.42P.AABB	79	39	42
RD.250.100.42P.AABB	98	39	42





Magnetic Power (AA)

- M1 standard power for light machining on parts with good contact faces
- M2 high power for additional security (heavy machining, high alloy steels, rough contact faces).

Magnetic Circuit (BB)

- SM single magnet circuit gives full demagnetization; required for high alloy / hard steels
- DM double magnet circuit delivers more magnetic energy; preferred for heavy cutting

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