

Direct Drives



... better take the direct route ...

Direct Drives from Danaher Motion offer a number of advantages when designing innovative and competitive machines and plant:

- ◆ couplings, toothed belts, spindles and other fitted components can be eliminated
- ◆ design is made much simpler
- ◆ power transmission without backlash
- ◆ more compact machinery assemblies
- ◆ reduced costs
- ◆ increased performance for the entire system

Direct Drives are integrated into the design of the machine, together with your components, and coupled directly to the load.

This results in the best, most efficient use of the space available. Elimination of the mechanical power transmission means considerable simplification in the layout of the machinery.

The overall system functions much more reliably, is faster and easier to assemble, and all this with substantially reduced costs.

Direct mounting gives you backlash-free power transmission. And this is the precondition for outstanding control-loop characteristics and high-precision positioning.

All in all, the performance of the machine is considerably enhanced. Standard built-in motors at favorable prices increase the competitiveness of your machines still further.

Simple modifications to the Direct Drives can also turn them into a customized product for your application.

Driven by

SERVOSTAR



Direct Drive Rotary

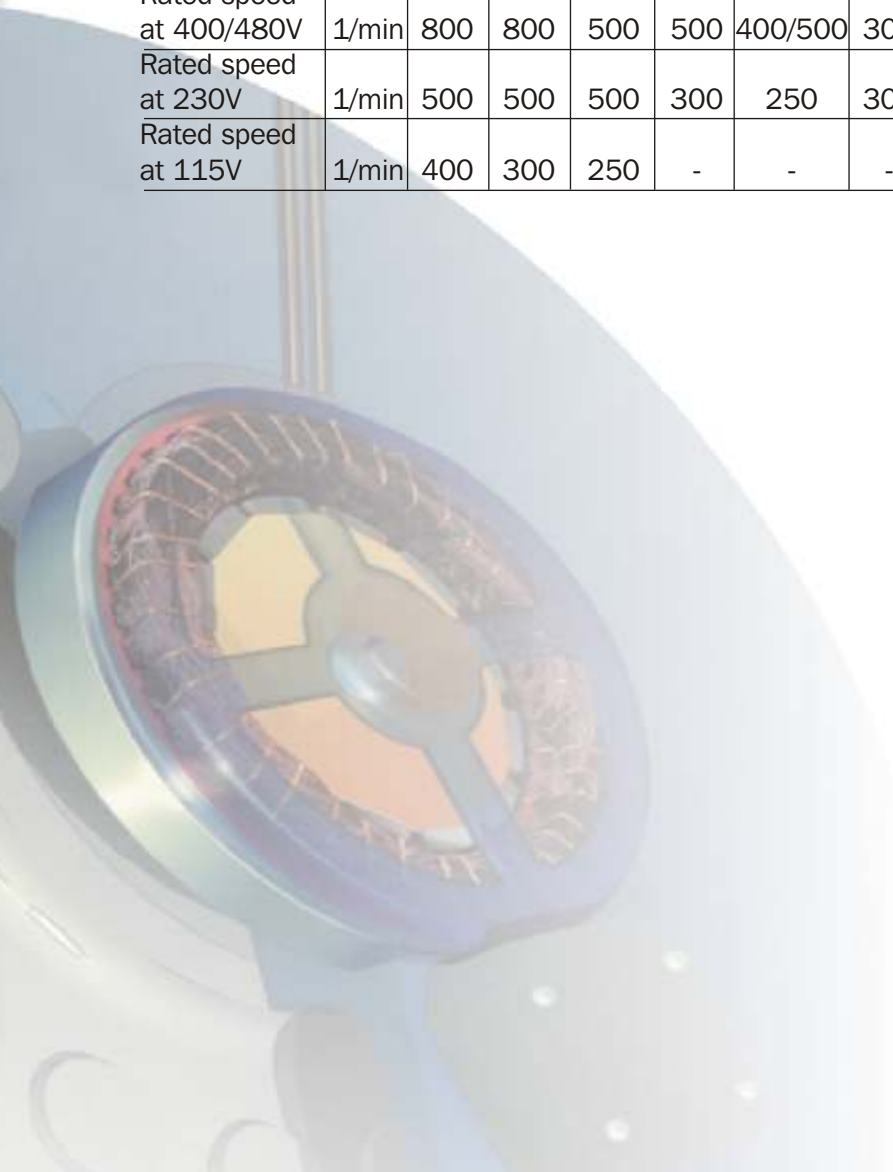
Direct Drive Rotary (DDR) servomotors of the GOLDLINE® DDR series are multipole hollow-shaft motors (8 to 16 pole-pairs) with their own bearings and a high-resolution encoder system. They are coupled directly to the load through hollow shafts (direct drive) and enable very precise and non-yielding drive solutions. Drives with DDR motors are maintenance-free, and run more quietly and with better dynamics than drives that use gears or toothed belts.

- ◆ rated mains voltage 115 / 230 / 400 / 480V
- ◆ rated speed up to 800 U/min
- ◆ electrical wiring through connectors
- ◆ integral high resolution encoder feedback
- ◆ 4 frame sizes, each with 3 different lengths
- ◆ Exact positioning with high bandwidth and stiffness
- ◆ Low losses, low remanent force, long life



Technical Data (selection)

	Dim	D061	D063	D081	D082	D083	D101	D102	D103	D141	D142	D143
Peak torque	Nm	16,9	64,4	51	104	177	141	252	501	367	519	1341
Rated torque	Nm	5,3	17,7	15,9	25,9	50,4	34,6	63,4	115,3	108	183	339
Rated speed at 400/480V	1/min	800	800	500	500	400/500	300	300	200/250	300	250/300	120
Rated speed at 230V	1/min	500	500	500	300	250	300	200	120	200	120	60
Rated speed at 115V	1/min	400	300	250	-	-	-	-	-	-	-	-



Direct Drive Linear

These linear synchronous motors consist of a magnet track (secondary section) and a lamination stack with a 3-phase winding (primary section). The linear motors generate a smooth, direct linear force. The load is coupled directly to the motor. Gears or couplings are not required, so these motors can be used to design an extremely stiff and backlash-free drive.

Various feedback units (Hall effect sensors for low accuracy requirements, or high-resolution linear encoders for maximum precision) can be applied, so that when they are combined with the **SERVOSTAR®** series of digital servo amplifiers you have linear drives for all imaginable applications. The linear motors of the **PLATINUM® DDL** series can be subdivided according to 2 basic concepts:


Ironcore :

"Ironcore" linear motors for high thrust, available with or without water cooling for the primary section.

Technical Data Ironcore (Selection, without cooling)

	Dim	ICD05 -050	ICD10 -050	ICD10 -100	IC11 -030	IC11 -050	IC22 -030	IC22 -050	IC22 -100	IC33 -150	IC44 -150	IC55 -250
Peak force	N	280	560	1130	375	625	750	1250	2500	5625	7500	15625
Cont. force	N	87	171	315	151	276	298	548	1198	2718	3617	7496
Voltage constant	V/m/s	36,3	36,4	72,8	30,9	51,4	61,7	103	103	154	154	29,7
theor.max. acceleration	g	30,2	30,7	33,7	15,3	17,7	15,9	18,5	20,4	21	21	18,4
Magnetic track-width	mm	80	80	130	60	80	60	80	130	180	180	285
Magnetic track-length	mm	n * 64 / 128 / 256 / 512 / 1024 mm										


Ironless

"Ironless" linear motors with coreless windings (no cogging, low mass of the primary section, no forces of attraction between the primary and secondary sections) for very smooth running or high acceleration of low masses.

Technical Data Ironless (Selection)

	Dim	IL06 -015	IL06 -075	IL12 -030	IL12 -100	IL18 -015	IL18 -050	IL18 -075	IL18 -100	IL24 -015	IL24 -050	IL24 -100
Peak force	N	60	300	240	800	180	600	900	1200	240	800	1600
Cont. force	N	21	87	76	226	62	184	260	338	83	245	450
Voltage constant	V/m/s	6,9	34,9	27,5	46,5	20,7	69,8	105	140	27,5	93,1	186
theor.max. acceleration	g	26,8	80,6	58,2	106	40,2	84,9	101	111	42,9	88,7	115
Magnetic track-length	mm	n * 64 / 128 / 256 / 512 / 1024 mm										

Optimum machinery design

Gearboxes, pinions, racks, toothed belts, chains - can all be eliminated.

Improved positioning accuracy

No inaccuracies caused by play in the gearing, stretching belts, shaft torsion or resonance.

Outstandingly smooth running

Operation in conjunction with high-resolution sin/cos encoder feedback systems results in extremely smooth running, even at low speeds.

Maximum possible efficiency

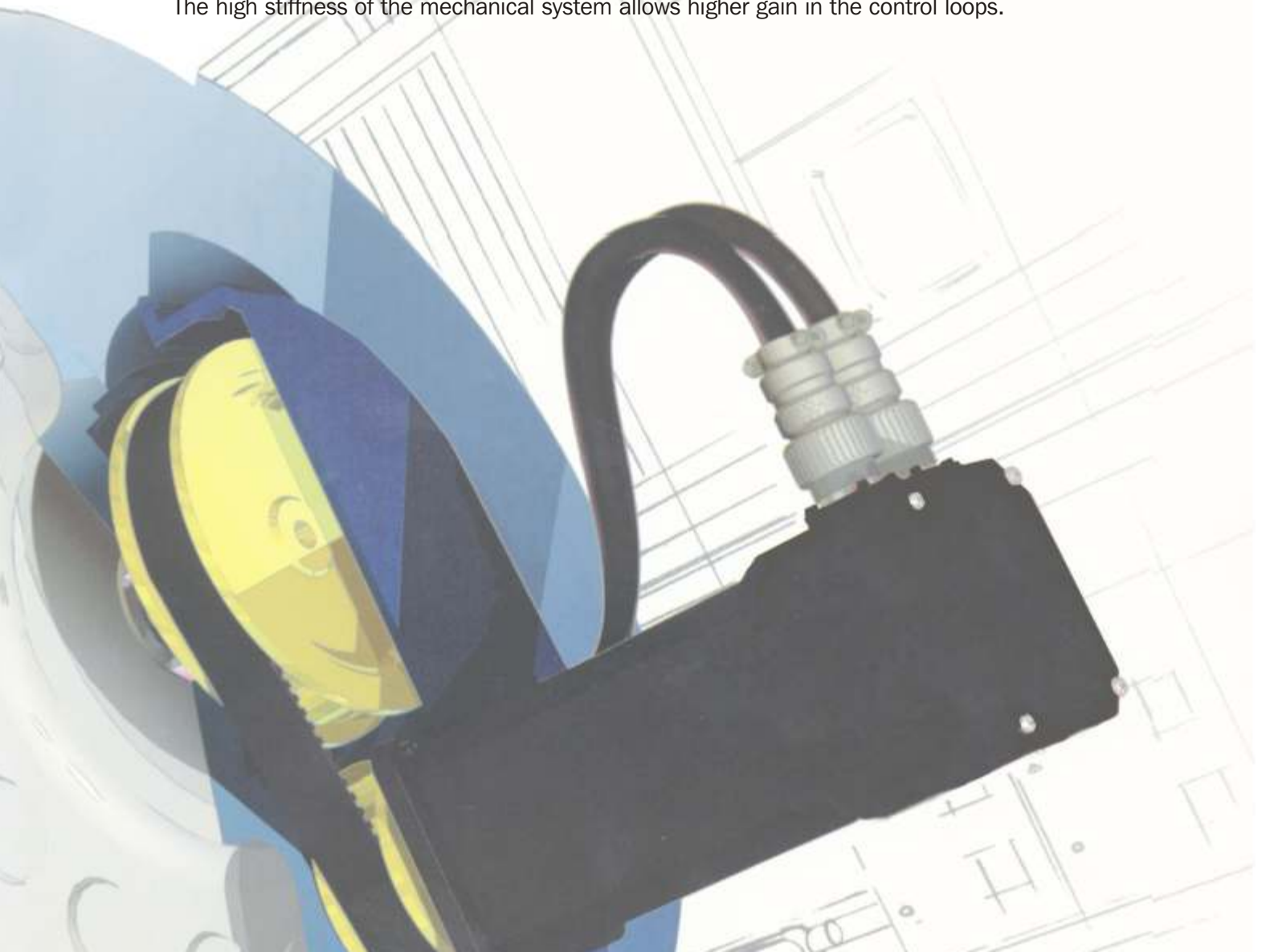
Optimum torque/inertia and torque/weight or power/weight ratios.

Robust and reliable

Thanks to their complete integration into the machine, built-in motors ensure high reliability of the overall system, even in extremely difficult operating conditions.

Enhanced performance of the machine

The high stiffness of the mechanical system allows higher gain in the control loops.





SERVOSTAR® 200



SERVOSTAR® 300



SERVOSTAR® 400



SERVOSTAR® 600

You'll find information to the drive series in the associated product brochures or on the internet at www.DanaherMotion.net



Danaher Motion GmbH
Wacholderstr.40-42
D-40489 Düsseldorf
Germany

Tel +49 (0) 203 / 9979- 0
Fax +49 (0) 203 / 9979-155
Email info@danahermotion.net
Internet www.DanaherMotion.net