

INDUSTRIAL ROBOTICS

ARCHIMEDES DRIVE

FOR HIGH-PERFORMANCE ROBOTICS




ImSystems

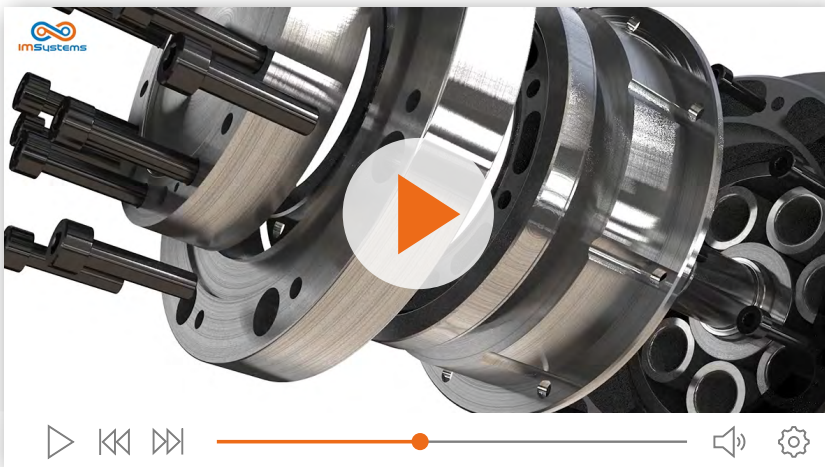
ARCHIMEDES DRIVE

REVOLUTIONIZING ROBOTIC CAPABILITIES

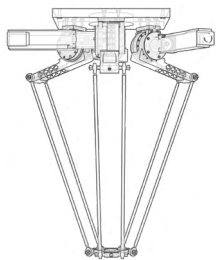
Experience unprecedented precision, efficiency, and robustness with the groundbreaking Archimedes Drive technology.

The Archimedes Drive revolutionizes motion control through its innovative design. This unique gear-free mechanism ensures True Zero Backlash and minimal lost motion, offering exceptional accuracy and smooth operation. Combined with its high efficiency and durability, the Archimedes Drive sets a new standard for drive systems across various industries. Making it a cornerstone technology for the future of high-performance mechatronics.

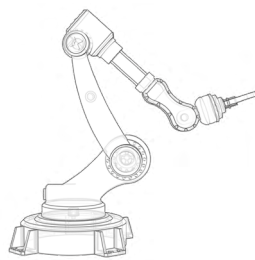
DISCOVER THE ARCHIMEDES DRIVE



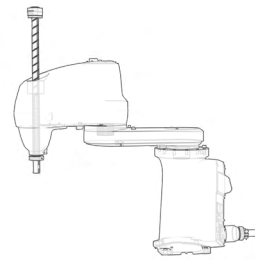
TECHNOLOGY
EXPLAINER



DELTA



ARTICULATED



SCARA



HUMANOID

PRECISE

Continuous contact ensures inherent true zero backlash

QUIET

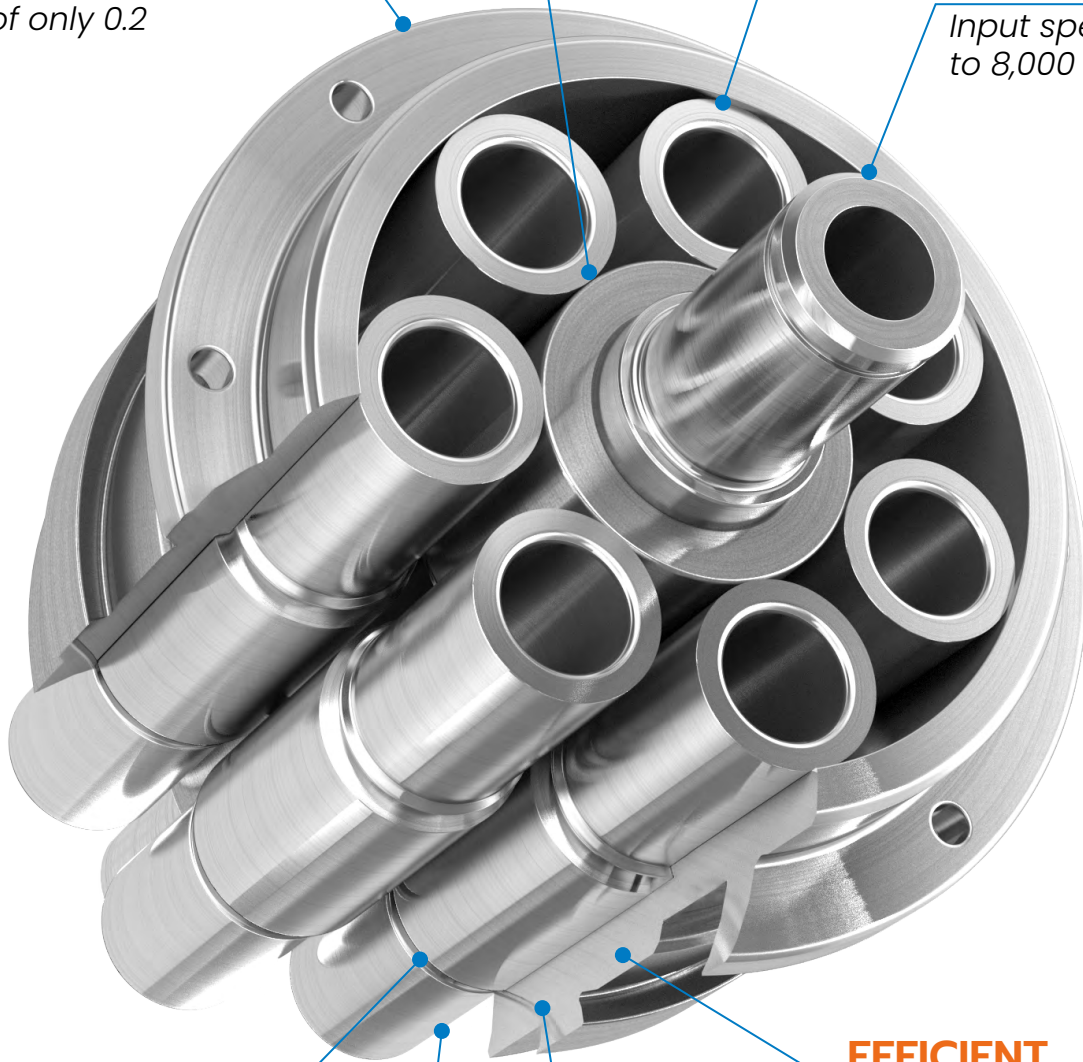
Operates at a noise level of only 50 dBA

STIFF

Up to 75 Nm/arcmin contributes to a lost motion of only 0.2 arcmin.

FAST

Input speeds up to 8,000 rpm



TAILORED RATIO

Between 25:1 and 200:1

EFFICIENT

Achieves up to 90%

TEMPERATURE RANGE

Optimal performance and reliability across a wide spectrum of temperatures

OVERTORQUE PROTECTION

Maintains robust performance under shock and overtorque conditions.

ARCHIMEDES DRIVE

DELTA-SERIES

	DELTA-15	DELTA-250
Repeated Torque	15Nm	250Nm
Reduction Ratio	25:1	35:1
Output Ratio	270 °	290 °



EPSILON-SERIES

	EPSILON-250	EPSILON-CUSTOM
Repeated Torque	250Nm	15 - 500Nm
Reduction Ratio	100:1	25:1 - 200:1
Output Ratio	continuous	continuous



SYNOVIAL-SERIES

	SYNOVIAL-75	SYNOVIAL-CUSTOM
Repeated Torque	75Nm	15 - 250Nm
Reduction Ratio	30:1	25:1 - 200:1
Output Ratio	continuous	continuous



COMPONENT SET

COMPONENT SET	
Repeated Torque	1 - 500Nm
Reduction Ratio	25:1 - 200:1
Output Ratio	Continuous



UNMATCHED PERFORMANCE



ROBUST & RELIABLE

15X STIFFER DESIGN

Enhances reliable and accurate movements.

JOINT STRENGTH

Ability to operate in unpredictable environments.

SHOCK & VIBRATION

Exceptional resistance, against vibration and shock loads.

OVERTORQUE

Prevents mechanical damage caused by shock loads and collisions.



DURABLE

90% EFFICIENCY

Less energy is lost in heat and vibrations.

ROLLING CONTACT

Smooth traction rollers reducing wear and tear.



ACCURATE

TRUE ZERO BACKLASH

For precise, accurate, and smooth movements.

TRANSPARENCY

For advanced, repeatable and seamless controllability.



SAFE

32X LESS INTENSE NOISE

Quieter operation for enhanced comfort and safety.

BACKDRIVABLE

Ensures safe operation in the event of collisions.

SPECIFICATIONS

Unit

DELTA
SERIES

EPSILON
SERIES

SYNOVIAL
SERIES

COMPONENT
SET

	Unit	DELTA SERIES	EPSILON SERIES	SYNOVIAL SERIES	COMPONENT SET
Repeated Torque	Nm	15-250	15-500	15-250	1-500
Nominal Torque	Nm	8-125	0.5-250	35	0.5-250
Slip Torque	Nm	18-280	1.5-600	88	1.5-600
Backlash	arcmin	0	<0.8	0	0
Max. Lost Motion	arcmin	0.2	0.8	0.2	0.2
Torsional Stiffness	Nm/arcmin	11-50	5-200	50	5-200
Max. Input Speed	rpm	>8,000	>8,000	>8,000	>8,000
Average Input Speed	rpm	4,000	4,000	4,000	4,000
Efficiency	%	up to 90	up to 90	up to 90	up to 90
Reduction Ratio	{-}	25:1-35:1	25:1-200:1	25:1-200:1	25:1-200:1
Noise Level	dBA	<50	<50	<50	<50
Output Rotation	deg.	270	continuous	continuous	continuous
Diameter	mm	72-120	tailored	70	tailored
Length	mm	60-180	tailored	90	tailored
Weight	kg	1-10	tailored	1.1	tailored
Ambient Temperature	°C	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Backdrivable	Y/N	Yes	Yes	Yes	Yes
Hollow Shaft	Y/N	No	Yes	Yes	Yes
Lubrication	Cycles	For life	For life	For life	For life
Service Life	Hours	>20,000	>20,000	>20,000	>20,000

GET IN TOUCH

Thibaud Verschoor
Co-Founder | Head of Product

Sten Lindwall
VP Sales

Innovative Mechatronic Systems B.V.

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