

No Gears...No Oil...Maintenance Free

Magnetic Direct Drive Technology

"OneMotion is changing the food industry's expectations in terms of hygiene, maintenance, inventory management, and energy consumption." Ed Samo, Maintenance Manager - Foster Farms

RELIABILITY

One Motion products drive conveyor belts by using a magnetic array, bonded inside a hollow core.



Resources & Documentation

EFFICIENCY

One transfer of energy! Electromagnetic power is used to directly rotate the shell. One Motion products are field tested and proven to improve efficiency by as much as 54%.

FOOD SAFETY

No lubricants, external motor or gearbox means no nooks and crannies where food debris likes to hide. This oil-free design is the ideal solution for conveying poultry and other produce.

- ✓ Simple Design
- ✓ As few as 2 Bearings
- ✓ 90% Fewer Rotating Components

PERFORMANCE

One Motion products out perform inner runner / gearbox solutions with quicker acceleration, wide speed range, and precise positioning.

Innovative design allows multi-drive configurations, such as the ability to run up to 4 belts at independent speeds.



For inquiries, e-mail or call:
onemotion@beltlink.com or 1-888-888-2358

Up to 54% energy savings over a traditional motor & gearbox



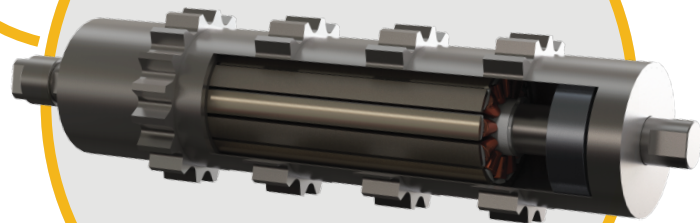
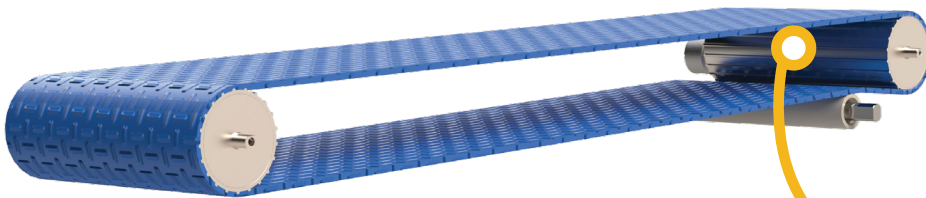
Why Magnetic Direct Drive Technology?

One Motion™ mag-drives use just one transfer of energy as electrical power is used for direct mechanical rotation (watts to torque). No energy is lost passing through gears.

Carefully shaped magnets are used to create a high pole count inside of the mag-drives. The large quantity of rare earth permanent magnets line the outer moving surface, creating high mechanical power and constant torque over a wide speed range.

No gearing is required for speed adjustments and can easily be operated using most popular variable frequency drives (VFDs), such as Allen-Bradley, Yaskawa, Lenze and Emerson.

The one transfer of energy prolongs the life of machinery by emitting minimal heat, thus improving reliability and making for a safer working environment.



REDUCED GHG EMISSIONS

Each mag-drive saves an estimated 1,000 lbs of carbon annually.



ONLY ONE TRANSFER OF ELECTRICAL ENERGY

Case Study: 43% Energy Reduction

A recent test was performed in a factory for the world's largest poultry producer that pitted a mag-drive against a drum motor (a gearmotor with the gears inside the pulley).

To create a fair and accurate test, the power going into the panel that is responsible for powering the motor/mag-drive was measured, using both a drum motor and a mag-drive.

The input power going into the panel is what ultimately affects the electric bill. Measuring the wires going into the panel also keeps the input power isolated from other power factor issues going into the motor, which could skew the results.

Measuring the amps in this way creates a clear picture of the actual power being being spent to drive or operate the conveyor.

The electric current on the wires to the drum motor were 1.1, 1.1, and 1.3 amps. That is an average of 1.16 amps.

The electric current on the wires to the mag-drive were 0.6, 0.6, and 0.8 amps, which equates to 0.66667 amps. The resulting difference was a reduction of about 44%!

 DRUM MOTOR RESULTS	 MAG-DRIVE RESULTS
1.2 (amps) x 480 (voltage) = 576 Watts	0.68 (amps) x 480 (voltage) = 326.4 Watts
When converted to kilowatts, it would be 0.5760	When converted to kilowatts, it would be 0.3264
That equates to 13.824 kWh in a day (24 hours)	That equates to 7.8336 kWh in a day (24 hours)
Based off of \$0.12 per kWh, the resulting monthly cost would be 49.77 and annual cost \$597.20.	Based off of \$0.12 per kWh, the resulting monthly cost would be 28.20 and annual cost \$338.41.



QUAD



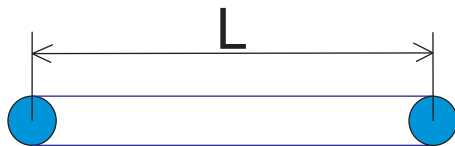
STATIONARY SHELL

Stationary shell with rotary shaft. Can be used as servo replacement.

The OneMotion motor has **No Gears**, which means **Constant Torque** at any speed.
Horsepower is not relevant. The OneMotion motor works with calculated Torque/Belt Pull.

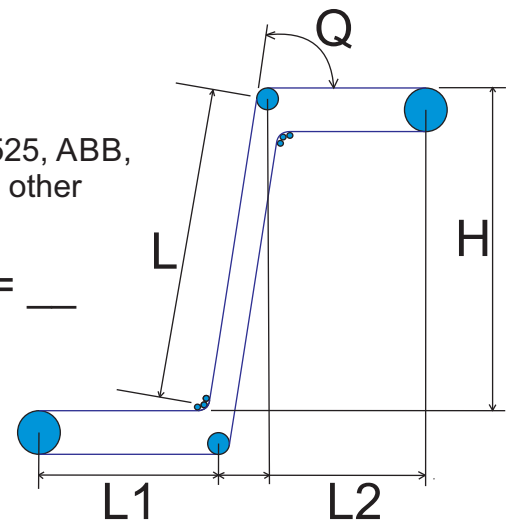
We need the following information to calculate the Torque/Belt Pull and quote the “right sized” motor:

- 1) Conveyor ends roller center-line length, angle, type: Z-Bend, Horizontal, Incline, Decline, Radius
- 2) Belt style (flat, timing, modular plastic, chain, SuperDrive, Dual Drive), Belt model, Belt width
- 3) Conveyor bed belt support style and return (wear strips, rails, solid bed, rollers, steel or plastic)
- 4) End driven or center driven conveyor
- 5) Cut shell, rubber lagged shell, square shell (4 flats around circumference in lieu of keyway)
- 6) Sprocket pitch diameter, lagged shell diameter, lagging thickness, crowning or flat
- 7) Inside distance between frames
- 8) Maximum conveyor payload, static or shock loading
- 9) Conveyor minimum and maximum speed (FPM)
- 10) Electrical termination connection style
- 11) Variable Frequency Drive make & model, e.g. A-B Powerflex 525, ABB, Invertek Optidrive E3, Lenze, Mitsubishi, Schneider, Siemens, other



L = ___ L1 = ___ L2 = ___

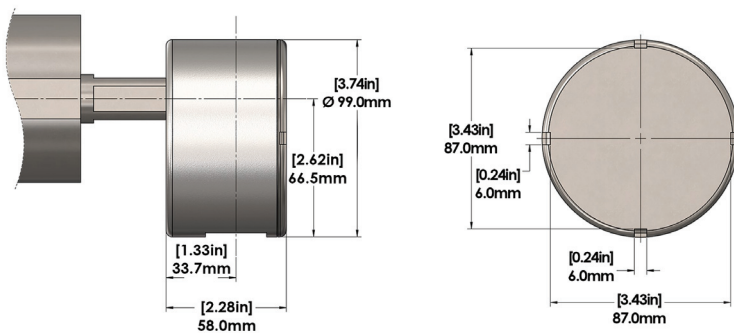
H = ___ or Q = ___



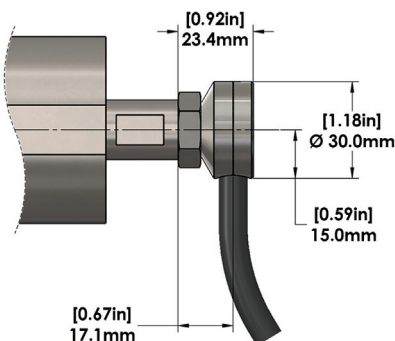
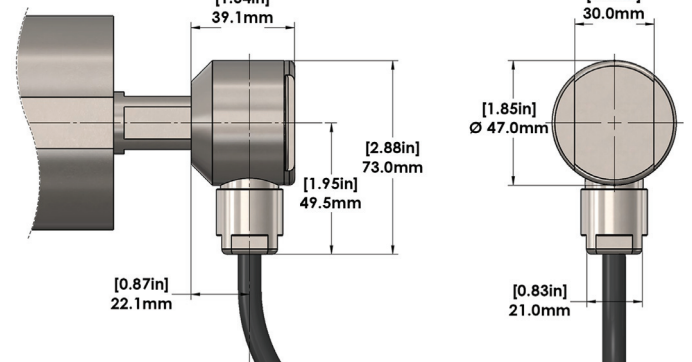
Please fill out the Data Sheet on last page

Electrical Termination Options:

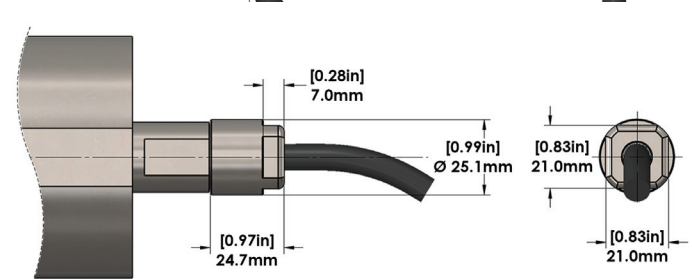
☐ Junction Box Connector, IP69K



☐ Repairable Connection Box, Right Angle Connection



☐ Flying Lead, Right Angle Connector



☐ Flying Lead, Straight Connector

ONE MOTION® Minimum - Maximum Face Width and Torque

DIAMETER	Min Face Width	Min Torque	Max Face Width	Max Torque
45mm (1.77")	197mm (7.76")	1.4Nm (1 lb-ft)	838.2mm (33.00")	5.6Nm (4.3 lb-ft)
58mm (2.28")	165mm (6.5")	3Nm(2.2 lb-ft)	1010MM (39.76")	10.7Nm (7.9 lb-ft)
81mm (3.19")	150mm (5.91")	3Nm(2.2 lb-ft)	1320.88mm (52")	40Nm (29.5 lb-ft)
120mm (4.72")	165mm (6.5")	8Nm(5.9 lb-ft)	1250MM (49.21")	80Nm (59 lb-ft)
135mm (5.31")	158.8mm (6.25")	10Nm(7.4 lb-ft)	1320mm (51.97")	160Nm (118.1 lb-ft)
165mm (6.50")	60.3MM (2.37")	10Nm(7.4 lb-ft)	1016mm (40")	240Nm (177.1 lb-ft)
215mm (8.46")	135MM (5.31")	30Nm(22.1 lb-ft)	711.2mm(28")	480Nm (354.2 lb-ft)
280mm (11.02")	TBD	TBD	508MM (20")	1000Nm(737.56 lb-ft)
406mm (15.98")	TBD	TBD	710MM (27.95")	1200Nm (885.6 lb-ft)

Note: The data above represents OneMotion motors manufactured to date. Consult "One Motion Support" for your design needs.

ONE MOTION® SYNCHRONOUS SPEED vs # OF MAGNETIC POLES

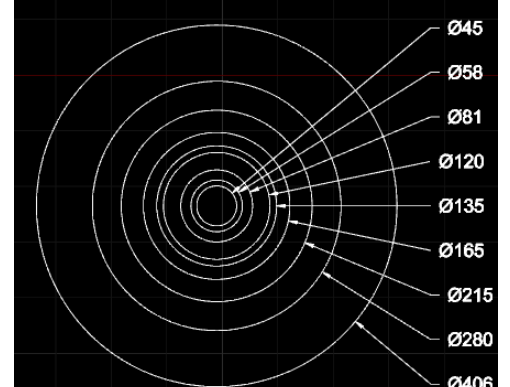
DIAMETER	# OF POLES	SPEED (RPM)			
		@ 1 Hz	@ 10Hz	@ 60 Hz	@ 120 Hhz
45mm (1.77")	14	9	86	514	1029
58mm (2.28")	14	9	86	514	1029
81mm (3.19")	14	9	86	514	1029
120mm (4.72")	14	9	86	514	1029
135mm (5.31")	28	4	43	257	514
165mm (6.50")	28	4	43	257	514
215mm (8.46")	40	3	30	180	360
280mm (11.02")	52	2	23	138	277
406mm (15.98")	64	2	19	113	225

Note: High speed and torque will generate Back EMF that will affect the acheivable speed. Consult "One Motion Support."

ONE MOTION® LEAD TIMES

COMPONENT	Lead Time	F.O.B.
Stock Motors	1 - 3 Days	Rogers, AR
Custom Motors	6 Weeks	Rogers, AR
Machined Sprockets	1 Day - 2 Weeks	Rogers, AR
Sleeve Lagging	2 -3 Weeks	Rogers, AR
Motor Mounts, Brackets	1 Day - 3 Weeks	Rogers, AR

OneMotion Motor Outer Diameters



"IN STOCK" ONE MOTION® DUAL CORE POWER PULLEYS					
FACE WIDTH	DIAMETERS (Torque - Belt Pull - MSRP)				
	58mm (2.3")	81mm (3.2")	120mm (4.7")	135mm (5.3")	165mm (6.5")
305mm (12.01")	5 Nm (3.7 ft-lbs) 16.5 lbf MSRP \$1,505	15 Nm (11.1 ft-lbs) 37 lbf MSRP \$1,789	25 Nm (18.4 ft-lbs) 43 lbf MSRP \$2,440	35 Nm (25.8 ft-lbs) 87.2 lbf MSRP \$2,972	70 Nm (51.7 ft/lbs) 180 lbf MSRP \$3,854
355mm (13.98")	6 Nm (4.4 ft-lbs) 20 lbf MSRP \$2,003	15 Nm (11.1 ft-lbs) 37 lbf MSRP \$2,123	30 Nm (22.1 ft-lbs) 52 lbf MSRP \$2,872	60 Nm (44.3 ft-lbs) 148.8 lbf MSRP \$3,592	80 Nm (59 ft-lbs) 206 lbf MSRP \$4,268
405mm (15.94")	6 Nm (4.4 ft-lbs) 20 lbf MSRP \$2,080	20 Nm (14.8 ft-lbs) 49.5 lbf MSRP \$2,354	35 Nm (25.8 ft-lbs) 60.5 lbf MSRP \$2,977	60 Nm (44.3 ft-lbs) 148.8 lbf MSRP \$3,792	110 Nm (81.2 ft-lbs) 283 lbf MSRP \$4,905
455mm (17.91")	8 Nm (5.9ft-lbs) 26.5 lbf MSRP \$2,054	25 Nm (18.4 ft-lbs) 62 lbf MSRP \$2,772	40 Nm (29.5 ft-lbs) 69 lbf MSRP \$3,322	80 Nm (59 ft-lbs) 198.4 lbf MSRP\$4,366	130 Nm (95.9 ft-lbs) 334 lbf MSRP \$5,572
510mm (20.08")	8 Nm (5.9ft-lbs) 26.5 lbf MSRP \$2,242	25 Nm (18.4 ft-lbs) 62 lbf MSRP \$3,103	40 Nm (29.5 ft-lbs) 69 lbf MSRP \$3,517	80 Nm (59 ft-lbs) 198.4 lbf MSRP \$4,538	140 Nm (103.3 ft-lbs) 360 lbf MSRP \$6,031
560mm (22.05")	10 Nm (7.4 ft-lbs) 33 lbf MSRP \$2,454	30 Nm (22.1 ft/lbs) 74 lbf MSRP \$3,135	40 Nm (29.5 ft-lbs) 69 lbf MSRP \$3,665	80 Nm (59 ft-lbs) 198.4 lbf MSRP \$4,743	160 Nm (118.1 ft-lbs) 411 lbf MSRP \$6,262
610mm (24.02")	10 Nm (7.4 ft/lbs) 33 lbf MSRP \$2,574	30 Nm (22.1 ft-lbs) 74 lbf MSRP \$3,251	60 Nm (44.3 ft-lbs) 103.5 lbf MSRP \$4,500	120 Nm (88.6 ft-lbs) 297.6 MSRP \$6,065	160 Nm (118.1 ft-lbs) 411 lbf MSRP \$6,518

Note 1: The stock pulleys above include OneMotion's hygienic Square Drive for sprocket installation.

The Square Drive is four flats around the shell circumference in lieu of a keyway.

Note 2: Above prices do not include electrical terminations (junction box or flying lead) or rubber lagging.

For additional "in stock" motors, please contact your representative about many other OneMotion Power Pulleys, Hub Motors (hollow bore and shafted), and Mult-Drive assemblies.

Please Answer All Highlighted Questions Below

Please send completed form to onemotion@beltlink.com

For questions, call (888)888-2358

RFQ #XXX - Organization Name and Person	
Application	
Quantity	
OneMotion Motor Style: Power Pulley, Multi-Drive, Hub with Hollow Core, Hub w/Shaft Active Shell, or Hub w/Shaft Stationary Shell	
Pulley Diameter: 45mm, 81mm, 120mm, 135mm, 165mm, 215mm, 280mm, or 406mm	
Shell Type: square drive for sprocket, straight, crowned, milled for positive drive (sprocket, super drive, or dual drive)	
Shell Special: rubber lagged, knurled, slot for v-guide(s), etc...	
Shell Width (RL) (mm or in)	
Mounting Offsets (mm or in)	
Frame Inside Dim. "EL" (mm or in)	
Mounting Flat Length (mm) standard is 25.4mm	
Overall Length "AGL" (mm or in)	
Mounting Square Dimension (mm): 45 = 10mm, 58 = 16mm, 81 to 280 = 20mm, 406 = TBD	
Connection Style: junction box, repairable right angle, straight flying lead, or right angle flying lead	
Power Cord Length (m or ft) not applicable to junction box	
Sealing Method: IP69K-washdown duty, IP67, or IP65	
Belt/Chain Manufacturer: Uni, Ammerall Beltech, Volta, Forbo, Habasit, Intralox, Lumsden	
Belt/Chain Style/Model No. (wire, chain, fabric, modular plastic, homogeneous)	
Belt Width (mm or in)	
Rubber Lagging Thickness (mm or in)	
Overall Shell Diameter for friction drive systems (mm)	
Sprocket Tooth Count, Sprocket Pitch Diameter	
Speed (FPM)	
Speed (RPM)	
Conveyor Style: horizontal, incline, radius, spiral, swan neck, end or center drive	
Conveyor Length T-T (m or ft) terminal pulley center to terminal pulley center	
Conveyor Incline Angle (if applicable)	
Conveyor Support Bed: UHMW-PE rails, solid UHMW-PE bed, steel slats, solid steel bed, or rollers	
Conveyor BullNose/DeadShaft Transfer (Y/N) and Number of (1 or 2)	
Conveyor Belt Scaper Bar (Y/N)	
Conveyor Run Frequency: continuous, reversing, or indexing	
Duty Cycle (hrs/day, days/wk)	
Product Accumulation (Y/N)	
Payload (lbs per Linear Foot)	
Total Payload (lbs)	
Belt Pull (lbf) <calculated with a minimum 2X Safety Factor>	
De-rate or Up-rate Power (Nm) Factor Pitch Diameter vs OM Motor Diameter	
Torque (Nm) minimum, including safety factor and de/up-rate power factors	
VFD Make/Model (Allen Bradley, Invertek, Lenze, Mitsubishi, etc...)	

Sketch Conveyor Below :



Resources & Documentation

