

Comprehensive Options



With DME Stack Mold Systems – the choice is yours. Our systems feature complete flexibility – built around a family of product standards that simplify implementation. Only DME gives you this wide range of choices. And, because they're from DME, you can expect reliability, advanced engineering, and outstanding performance.

DME delivers critical expertise with mold technology, while Milacron offers high-performance injection molding machinery when the application demands it. The combination is unbeatable.

Turnkey Systems Deliver a Total Solution

When you choose DME as your partner for Stack Mold Systems, you're choosing a total solution. How big that solution is, will be your choice. We can deliver a turnkey molding system (excluding the cores and cavities) including a molding machine.

Our turnkey systems may include:

- Mold bases
- Hot runner systems and controllers
- Components – including centering and actuation devices
- System assembly
- Injection molding machines

View DME Stack Molds animation
at www.dme.net/stackmolds

DME offers the following pre-engineered subassemblies for your Stack Mold Systems:

Centering Devices

Used for synchronizing two or more parting line openings.

Helical Gear Shaft and Nuts

- Available in 28mm and 38mm nominal gear diameters

Hot Runner Systems

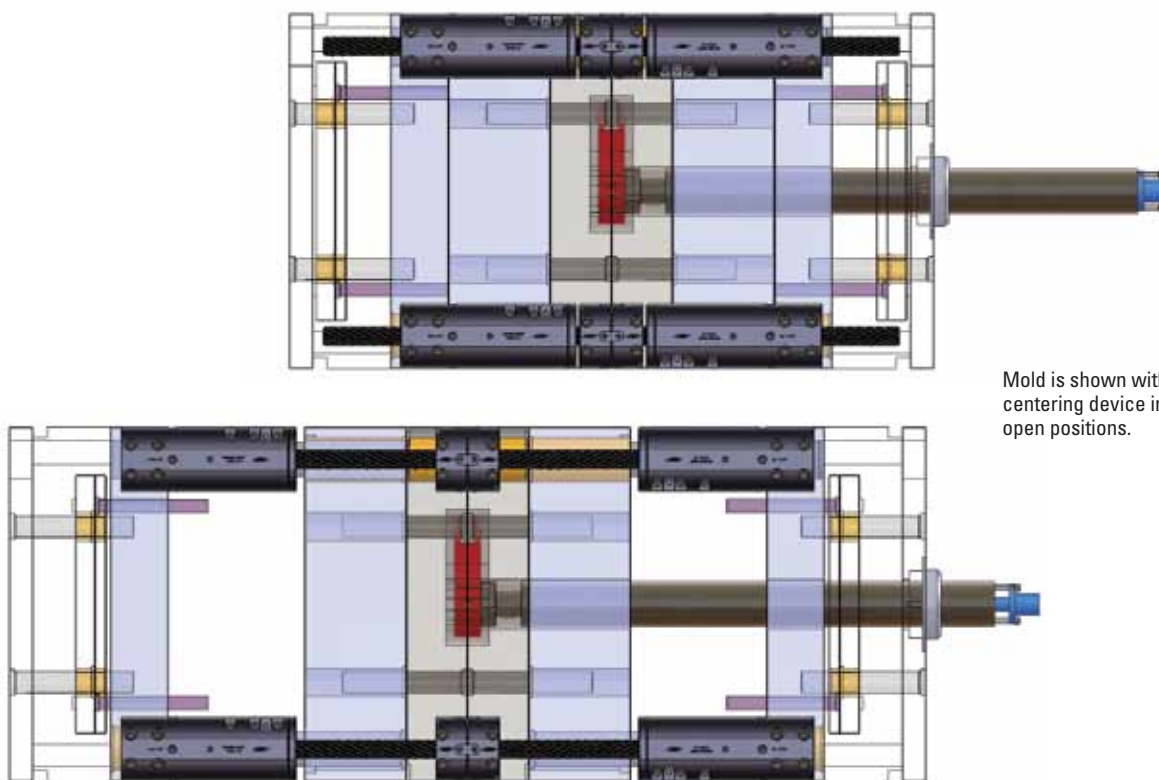
To deliver the plastics from the machine barrel to the cavities. They include sprue bars, stack manifolds, and nozzles optimized to your application.

Center Supports

To support the center portion of the stack mold while the mold is open. Adjustable to compensate for misalignment and wear, they can transfer the weight of the mold center portion to the:

- Top tie bars
- Bottom tie bars
- Both top and bottom tie bars
- Machine ways

Stack Mold Components



Mold is shown with Helical Gear centering device in closed and open positions.

Stack Molds

Today's plastics processor has to do more with less – less labor, less capital investment, less floor space, and less time. DME can help with comprehensive options for high productivity. Stack Mold Systems can double the output of standard, single face molds between the same tie bar distance. Because the cavity forces cancel each other out, the necessary clamping forces for stack molds are essentially the same as for single face molds.

Key benefits of Stack Mold Systems include:

- Cost-effective solution for increasing capacity
- Optimum use of shop floor space and machine capacity
- Expanded molding capacity without capital expenditures
- More output per unit of shop floor labor – higher productivity in your operation

Stack Mold Systems are ideally suited for automotive applications, housewares, packaging, caps and closures, cutlery and electronic industries. Any applications that require mating parts (container and lid, top and bottom, or left and right) or strict color matching are also candidates for increased molded part quality and molding productivity through stack molds.

Engineering Expertise Ensures Success

The DME design and engineering team delivers over six decades of experience with injection molding, and injection mold design. Our engineering services can quickly scale to meet the specific needs of your program. Our designers can assist in the choice and application of our rigorously engineered and proven Stack Mold Systems and Components. We can offer the entire stack mold design, configuration, and assembly – including the mold base, centering and actuating components, hot runner system, and temperature controller.

All DME Stack Mold components have been designed for optimal utility and reliability. Because DME delivers industry-leading expertise with Stack Mold Systems, we're able to provide a worldclass, integrated solution with all systems and components operating at optimum efficiency.

Stack Mold Components



Standard Stack Mold Systems

DME offers a centering actuation system, Helical Gear, to suit your specific requirements.

A choice of center support configurations is available – including support on the tie bars (top, bottom, or both), on the machine ways, or on both the ways and tie bars. DME can further increase the efficiency of your system with our new Quick Strip System, which removes molded parts from the mold without the use of a traditional ejector system.

Standard Stack Mold Components

DME also supplies a full line of standard Stack Mold Components. These standard components are available off-the-shelf and can be ordered for immediate shipment to meet your needs. Experienced mold designers can customize any Stack Mold System to meet their needs by using our easy-to-follow standards.

Pre-Engineered Subassemblies

Centering Devices – to synchronize two or more parting line openings.

- Helical Gear
- Rack & Gear

Center Supports – to support the center portion of the stack mold while the mold is open.

- Low-cost bronze shoes
- Frictionless Smart Line Center Support System

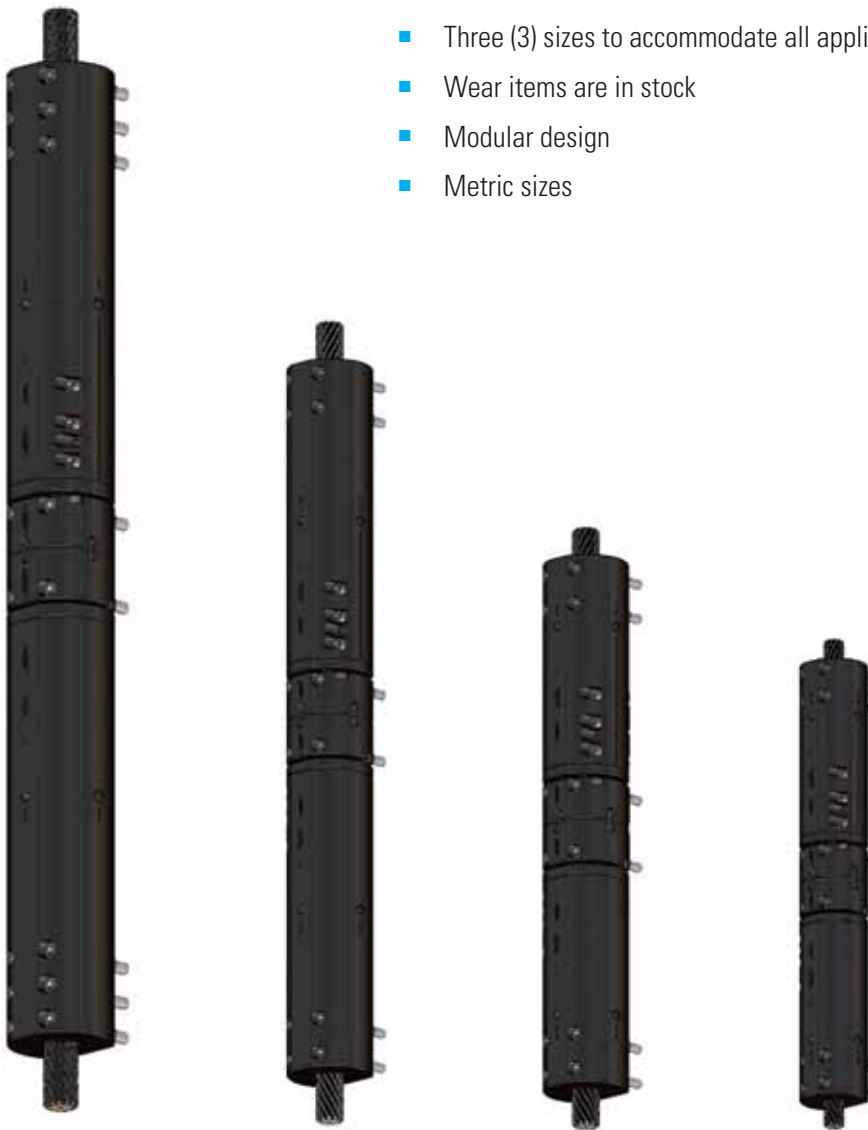
Hot Runner Systems – to deliver the plastics from the machine barrel to the cavities.

- Sprue bars
- Stack manifold
- Nozzles

Helical Gear Systems

Helical Gear Centering Device Advantages

- Easily adjustable to compensate for machining inaccuracies or stack height adjustments
- Small footprint to accommodate side entry robots and/or secondary injection units
- Light-weight assemblies with aluminum housings for easy assembly and maintenance
- Built-in mold seizing safety mechanism: Nylon thread designed to fail before damage to mold or press
- Standardized components to simplify design, build, and maintenance
- Three (3) sizes to accommodate all applications
- Wear items are in stock
- Modular design
- Metric sizes



Helical Gear Components

DME Helical Gear housings and assemblies greatly simplify the design and development of stack molds – leaving you more time to concentrate on core and cavity details.

HELICAL GEAR CENTERING DEVICE – complete assembly

HELICAL GEAR SHAFT – available in (3) sizes



ROLLER BEARING

ROLLER BEARING HOUSING



NUT HOUSING COVER

NYLON NUT – available in left- or right-hand threads



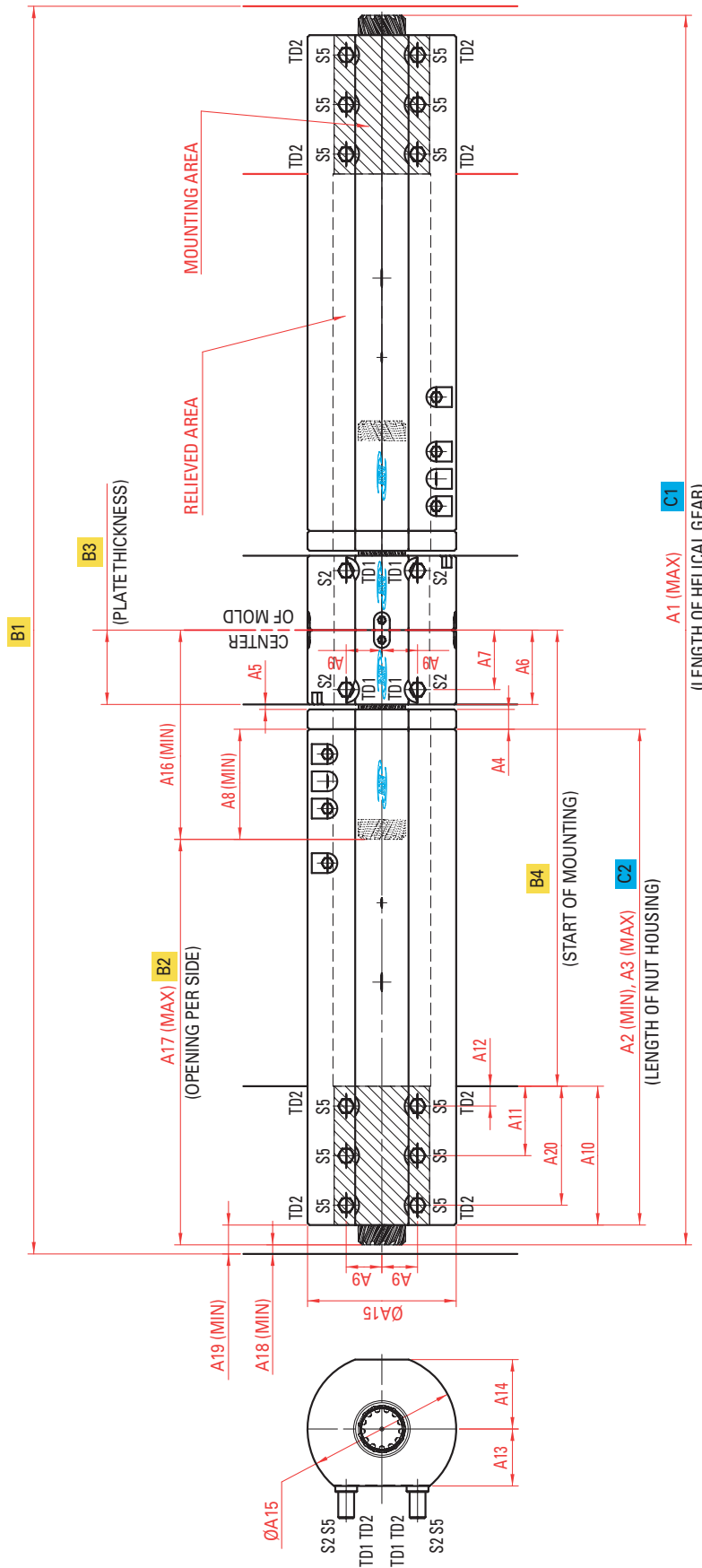
NUT HOUSING – cut to length to meet the requirements of your application

NOTE: Number of assembly screws and tubular dowels vary with Helical Gear size.

Helical Gear Stack Mold Centering Device Set-up and Maintenance Guide available upon request or at www.dme.net/hgguide

Helical Gear Calculations

DME Helical Gear Stack Mold Centering Device Calculation Sheet



NOTE: All dimensions are in millimeters (mm).
Number of assembly screws and tubular dowels vary with Helical Gear size.

Helical Gear Calculations

C1 = 2 x (A16 + B2) (Final Length of Helical Gear)

IF $B4 + A10 + A19 \leq 0.5 \times B1$

Y -> OK

N -> ERROR: NUT HOUSING IS TOO LONG: INCREASE B1 OR REDUCE B4

IF $B3 \geq A6$

Y -> OK

N -> ERROR: CENTER PLATE IS TOO THIN: INCREASE B3

IF $B2 + A16 + A18 \leq 0.5 \times B1$

Y -> OK

N -> ERROR: GEAR IS TOO LONG: INCREASE B1 OR REDUCE B2

IF $C1 \leq B1 - 10$

Y -> OK

N -> ERROR: GEAR IS TOO LONG: INCREASE B1

IF $C1 \leq A1$

Y -> OK

N -> ERROR: GEAR IS TOO LONG: REDUCE B2

C2 = B4 + A10 - A6 - A5 - A4 (Final Length of Nut Housing)

IF $C2 \geq A2$

Y -> OK

N -> ERROR: NUT HOUSING IS TOO SHORT: INCREASE B4

IF $C2 \leq A3$

Y -> OK

N -> ERROR: NUT HOUSING IS TOO LONG: REDUCE B4

IF $C2 \leq 0.5 \times B1 - A6 - A5 - A4 - A19$

Y -> OK

N -> ERROR: NUT HOUSING IS TOO LONG: INCREASE B1 OR REDUCE B4

INPUT DATA				
	HG28-1000	HG38-1200	HG38-1500	HG48-2000
B1				
B2				
B3				
B4				

OUTPUT DATA				
	HG28-1000	HG38-1200	HG38-1500	HG48-2000
C1				
C2				

MOUNTING SCREWS AND DOWELS					
		HG28-1000	HG38-1200	HG38-1500	HG48-2000
S2	Socket Head Cap Screw	M10 x 1.50 x 75 (Part # M1075SH)	M12 x 1.75 x 110 (Part # M12110SH)	M12 x 1.75 x 110 (Part # M12110SH)	M16x130mm (Part# M16130SH)
S5	Socket Head Cap Screw	M10 x 1.50 x 75 (Part # M1075SH)	M12 x 1.75 x 110 (Part # M12110SH)	M12 x 1.75 x 110 (Part # M12110SH)	M16x130mm (Part# M16130SH)
TD1	Tubular Dowel	Ø14 x 10 (Part # PH1410)	Ø18 x 12 (Part # PH1812)	Ø18 x 12 (Part # PH1812)	Ø22mm x 12mm (Part # PH2212)
TD2	Tubular Dowel	Ø14 x 10 (Part # PH1410)	Ø18 x 12 (Part # PH1812)	Ø18 x 12 (Part # PH1812)	Ø22mm x 12mm (Part # PH2212)

DME is with you every step of the way!

Send your request or questions to
DME Applications Engineering:
appl_eng@dme.net, and we will
take it from there.

CONSTANT DIMENSIONS				
	HG28-1000	HG38-1200	HG38-1500	HG48-2000
A1	1000	1200	1500	2000.0
A2	245	296	296	400.0
A3	436	520	670	900.0
A4	12	15	15	20.0
A5	5	5	5	5.0
A6	47	60	60	75.0
A7	37	48	48	60.0
A8	60	75	75	100.0
A9	22	29	29	36.0
A10	70	90	90	140.0
A11	55	70	70	70.0
A12	15	20	20	20.0
A13	35	45	45	57.5
A14	45	57	57	70.0
A15	95	120	120	150.0
A16	124	155	155	200.0
A17	376	445	595	800.0
A18	5	5	5	5.0
A19	5	5	5	5.0
A20	—	—	—	120.0

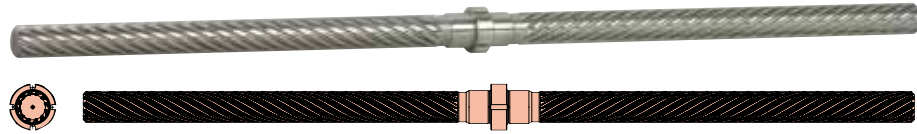
Helical Gear Components

Helical Gear

Helical Gear Shaft

Material: Pre-Hardened Steel

Variable length; cut to match your application.



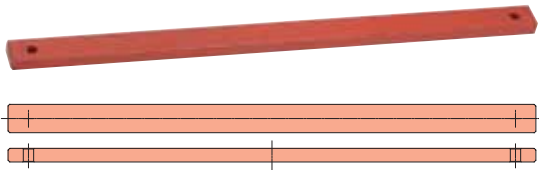
Alignment Rod

Material: Steel



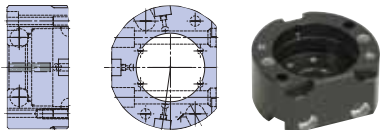
Shipping Strap

Material: Steel



Roller Bearing Housing

Material: Aircraft Aluminum



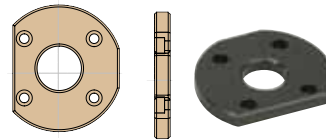
Tapered Roller Bearing

Material: Industry Standard



Nut Housing End Cap

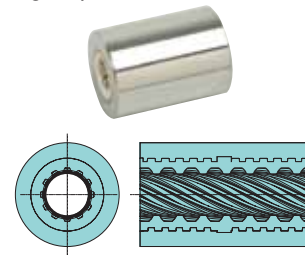
Material: Aircraft Aluminum



Nylon Nut (left and right)

Material: Outer Sleeve – Aluminum;
Nylon Insert – High-strength nylon

Nylon insert provides lubricity and an engineered fail-safe. The nylon insert will strip from the outer sleeve should the stack mold seize. This minimizes the potential of costly damage to the mold.



NOTE: It is recommended that a set of spare nylon nuts be kept on hand.

ITEM NUMBERS		
HELICAL GEAR SHAFT		
HG28SH1000	HG38SH1200	HG48SH2000
—	HG38SH1500	—
NUT HOUSING END CAP		
HG28NHC	HG38NHC	HG48NHC
NYLON NUT		
HG28NNL (left)	HG38NNL (left)	—
HG28NNR (right)	HG38NNR (right)	—
BRASS NUT		
HG28BNL (left)	HG38BNL (left)	HG48BNL (left)
HG28BNR (right)	HG38BNR (right)	HG38BNR (right)
ROLLER BEARING HOUSING		
HG28RBH	HG38RBH	HG48RBH
TAPERED ROLLER BEARING		
HG28RB	HG38RB	HG48RB
ALIGNMENT ROD		
HG28AR	HG38AR	HG48AR
SHIPPING STRAP		
HG28ST	HG38ST	HG48ST