



# DAVIS-STANDARD®

Where your ideas take shape.



Aftermarket

## Hi-Tech Melt Pumps for Extrusion

### Overview

#### What A Melt Pump Does For Your Line

Stabilizes throughput: to 0.1 percent over any period of time, vs. about five to ten percent for an extruder alone.

Lowers melt temperature: higher efficiency of a melt pump means lower melt temperature.

Improves energy efficiency: total energy consumed by a melt pump and extruder is less than when extruder is used alone.

Stabilizes extrudate dimensions: when constant throughput of a melt pump is combined with a synchronized haul-off speed, extrudate dimensions can be held to extremely close tolerances.

Eliminates surging: an extruder used alone is susceptible to surging, especially when the output rate is high. The melt pump eliminates any surging.

Davis-Standard's Harrel melt pumps are backed by over 50 years of process and manufacturing experience making precision melt pumps specifically designed for plastic extrusion.

### Features

#### Description Of Components

- Melt pump: the Davis-Standard melt pump is not a unit originally designed for some other application – it was specifically designed for service with precision extruders. Simple, easy to clean design
- Precision helical gears: eliminates the “tooth noise” which occurs with spur gear designs. Through-port construction and close fitting flanges eliminate dead spots, where plastic can hang up and degrade. Heating of the polymer is minimized by limiting the maximum speed to about 60 RPM
- Mounting flanges: ideally, all you'd have to do to install a melt pump is to unscrew the die, move it a foot or so, drop in a melt pump, and bolt it back together again. Davis-Standard can furnish mounting flanges to match your extruder and your die, with split clamps to hold it all together
- Davis-Standard provides melt pump control systems ranging from our cost competitive DS-eTPC II to our high end EPIC III PLC-based system.

[davis-standard.com](http://davis-standard.com)

# Hi-Tech Melt Pumps for Extrusion

Pump Sizing Chart

Size	Approximate Extruder lbs/hour	Melt Pump	cc/rev	Approximate Pump lbs/hour	Pump HP
1-inch Extruder	15	GP-0005	0.5	4	0.5
1-inch Extruder	15	GP-001	1	8	0.75
1-inch Extruder	15	GP-003	3	15	1
1 1/4-inch Extruder	30	GP-003	3	24	1
1 1/4-inch Extruder	30	GP-005	5	30	1
1 1/2-inch Extruder	55	GP-005	5	40	2
1 1/2-inch Extruder	55	GP-010	10	55	2
1 3/4-inch Extruder	80	GP-010	10	80	2
2-inch Extruder	110	GP-020	20	110	3
2 1/2-inch Extruder	215	GP-020	20	160	3
2 1/2-inch Extruder	215	GP-050	50	215	5
3 1/2-inch Extruder	400	GP-050	50	400	5

## A complete system for adding melt pump precision to existing lines includes:

- High precision pump - designed and built by Davis-Standard
- Precision servo AC drive system
- Precision gear reducer and drive motor, mounted on support stand; universal coupling accommodates shaft misalignment
- Precision temperature controls - inlet, pump, outlet
- Pressure control system - controls inlet pressure and integrates operation of the extruder
- Digital synchronization with puller speed optional - gives one-button control

