Davis-Standard Business Areas

- Aftermarket Services
- Blow Molding Systems
- Blown Film Systems
- Cast Film Systems
- Compounding Systems
- Elastomer Systems
- Extrusion Coating and Laminating Systems
- Fiber Systems
- Foam Systems
- Laboratory Equipment and Specialty Systems
- Liquid Coating and Laminating Systems
- Pelletizing Systems
- Pipe, Profile and Tubing Systems
- Process Control Systems
- Recycle/Reclaim Systems
- Sheet Systems
- Twin Screw Systems
- Unwinding and Winding Systems
- Wire and Cable Systems

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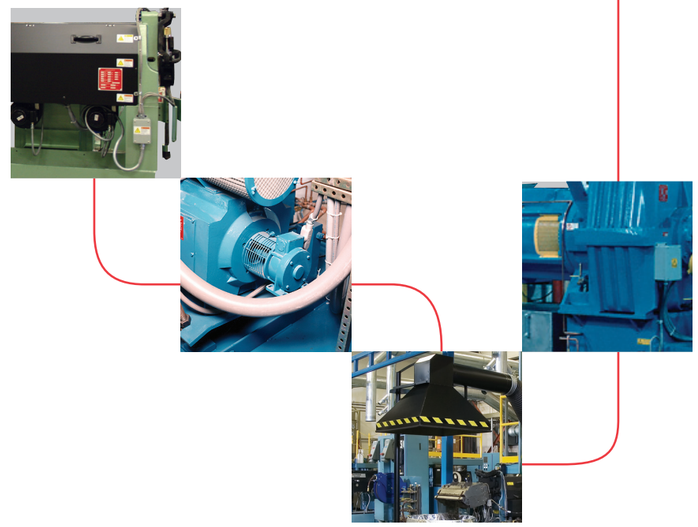
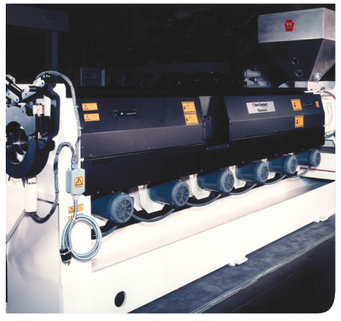
Davis-Standard®

THERMATIC® SERIES EXTRUDER



3 1/2-inch (90mm) 30:1 Air-Cooled Thermatic



4 1/2-inch (115mm) 30:1 Air-Cooled Thermatic

Davis-Standard's signature Thermatic® extruder is built for the most demanding processing requirements. Often described by customers as "an industry workhorse," the Thermatic is designed for durability, minimal maintenance, and quiet operation for multiple processing requirements and applications. It is available with a wide range of feedscrews and control systems, and in sizes ranging from 1 1/2 to 10 inches (40 to 250mm) with L/D's ranging from 12:1 to 40:1.

THERMATIC® EXTRUDER SPECIFICATIONS

Extruder Size	L/D Ratio		Reducer Lube System	Reduction Ratio	AGMA hp Rating @ 100 RPM (kW) @ Indicated S.F.*	Thrust Bearing L_{10} Life (HRS) @ 100 RPM, 5000 psi (245 bar) Cont. Operation	Max. Internal Barrel Pressure psi (bar)
1 ½ in. (40mm)	24:1	30:1	Splash/Circulating	17.56:1	35 (26) / 1.25 S.F.	398,000	10,000 (690)
2 in. (50mm)	24:1	30:1	Splash/Circulating	17.56:1	35 (26) / 1.25 S.F.	398,000	10,000 (690)
2 ½ in. (65mm)	24:1	30:1	Splash/Circulating	17.26:1	160 (119) / 1.25 S.F.	544,000	10,000 (690)
3 in. (75mm)	24:1	30:1	Splash/Circulating	17.26:1	160 (119) / 1.25 S.F.	179,000	10,000 (690)
3 ½ in. (90mm)	24:1	30:1	Splash/Circulating	17.39:1	257 (192) / 1.25 S.F.	421,000	10,000 (690)
4 in. (100mm)	24:1	30:1	Splash/Circulating	17.39:1	257 (192) / 1.25 S.F.	192,000	10,000 (690)
4 ½ in. (115mm)	24:1	30:1	Circulating	17.36:1	400 (298) / 1.50 S.F.	453,000	10,000 (690)
5 in. (130mm)	24:1	30:1	Circulating	17.36:1	400 (298) / 1.50 S.F.	192,000	10,000 (690)
6 in. (150mm)	24:1	30:1	Circulating	17.21:1	530 (395) / 1.50 S.F.	509,000	10,000 (690)
6 ½ in. (165mm)	24:1	30:1	Circulating	17.21:1	530 (395) / 1.50 S.F.	300,000	10,000 (690)
7 in. (175mm)	24:1	30:1	Circulating	18.11:1	700 (522) / 1.50 S.F.	202,450	7,000 (483)
8 in. (200mm)	24:1	30:1	Circulating	17.21:1	1,420 (1,059) / 1.50 S.F.	103,500	10,000 (690)
9 in. (225mm)	24:1	30:1	Circulating	17.21:1	1,420 (1,059) / 1.50 S.F.	90,600	7,000 (483)
10 in. (250mm)	24:1	30:1	Circulating	17.21:1	2,500 (1,864) / 1.50 S.F.	258,900	10,000 (690)

Heat Zone Data

Extruder Size	Barrel Zones		kW/Barrel Zone	Heater Voltage***	Phase		Approximate Weight**	Height**	Length**	Width**
1 ½ in. (40mm)	4	5	3	230/460	1	1	3,600 lbs. (1633 kgs)	63 in. (1600mm)	72 in. (1829mm)	42 in. (1067mm)
2 in. (50mm)	3	4	5.6	230/460	1	1	4,550 lbs. (2064 kgs)	73 in. (1854mm)	87 in. (2210mm)	42 in. (1067mm)
2 ½ in. (65mm)	4	5	7	230/460	1	1	6,500 lbs. (2948 kgs)	76 in. (1930mm)	110 in. (2794mm)	49 in. (1245mm)
3 in. (75mm)	5	6	7	230/460	1	1	6,900 lbs. (3129 kgs)	76 in. (1930mm)	127 in. (3226mm)	49 in. (1245mm)
3 ½ in. (90mm)	4	5	11	230/460	1	1	9,800 lbs. (4444 kgs)	82 in. (2083mm)	148 in. (3759mm)	52 in. (1321mm)
4 in. (100mm)	5	6	11	230/460	1	1	10,400 lbs. (4717 kgs)	82 in. (2083mm)	164 in. (4166mm)	52 in. (1321mm)
4 ½ in. (115mm)	5	6	15.6	230/460	3	3	14,300 lbs. (6485 kgs)	86 in. (2184mm)	186 in. (4724mm)	63 in. (1600mm)
5 in. (130mm)	6	7	15.6	230/460	3	3	15,100 lbs. (6848 kgs)	86 in. (2184mm)	207 in. (5258mm)	63 in. (1600mm)
6 in. (150mm)	5	6	24	230/460	3	3	18,500 lbs. (8390 kgs)	94 in. (2388mm)	243 in. (6172mm)	70 in. (1778mm)
6 ½ in. (165mm)	6	7	24	230/460	3	3	19,500 lbs. (8844 kgs)	94 in. (2388mm)	272 in. (6909mm)	70 in. (1778mm)
7 in. (175mm)	6	7	24	230/460	3	3	19,000 lbs. (8618 kgs)	88 in. (2235mm)	263 in. (6680mm)	74 in. (1880mm)
8 in. (200mm)	5	6	33	230/460	3	3	35,000 lbs. (15875 kgs)	106 in. (2692mm)	308 in. (7823mm)	90 in. (2286mm)
9 in. (225mm)	6	7	33	230/460	3	3	37,000 lbs. (16783 kgs)	106 in. (2692mm)	336 in. (8534mm)	90 in. (2286mm)
10 in. (250mm)	5	6	54	230/460	3	3	60,000 lbs. (27211 kgs)	120 in. (3048mm)	493 in. (12522mm)	120 in. (3048mm)

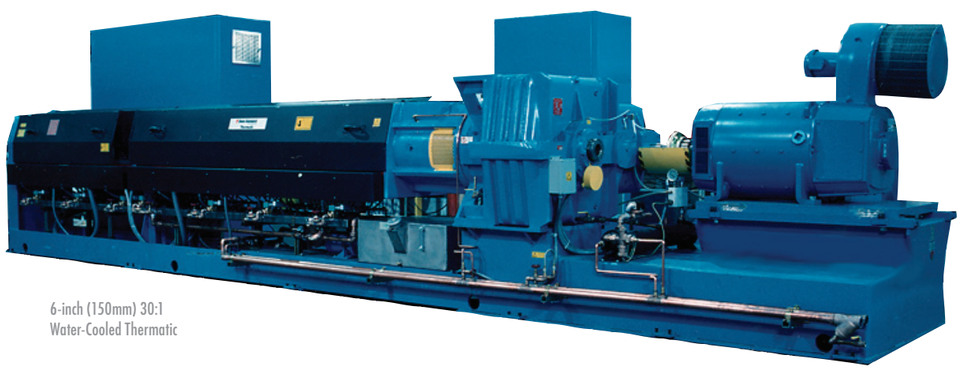
* Ratings at other reduction ratios may vary.
** Dimensions and weights are based on typical 30:1 L/D extruder and are for reference only.
*** Other voltages available upon request.

Get to Know Us

Davis-Standard has set the standard in extrusion equipment. We hope you will take the time to get to know us. Our capabilities go far beyond our equipment. They extend to our professional training experts, laboratory personnel, design engineers, and hands-on field engineers who will work with you every step of the way.

6-inch (150mm) 34:1
Water-Cooled Thermatic

3 1/2-inch (90mm) 24:1
Water-Cooled Thermatic



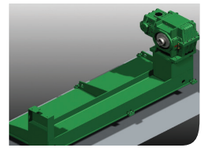
6-inch (150mm) 30:1
Water-Cooled Thermatic

Design Advantages

Every component on the Thermatic is engineered for efficiency and long-term performance.

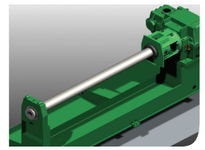
Base features a steel plate and channel base.

- Integral leveling plates
- Front flange barrel support
- Optional barrel support one zone back



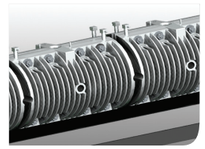
Barrel for 10,000 psi operating pressure.

- Removable front barrel flange
- Rupture disc and pressure transducer behind the front flange
- Integral breaker plate recess
- One-piece bimetallic cast-in liner
- Optional barrel vent stacks for removal of extrudate volatiles
- Optional corrosion-resistant and abrasion-resistant liner materials



Air-cooled or water-cooled systems based on the required barrel cooling capacity.

- For air-cooled extruders, air blowers are mounted on individual heater shrouds
- Air exits the hoods at the bottom, opposite the operator side
- Standard blowers or optional high capacity blower systems available
- For water-cooled extruders, system is comprised of stainless steel tank, pump, manifolds and valving, flexhoses, and water cooled heat exchangers
- Wetted metal parts are either stainless steel or brass

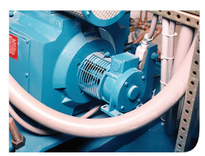


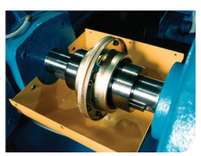
Heaters are precision bored and securely bolted to the barrel.

- Cast aluminum or cast bronze available depending on application temperature
- Water-cooled heaters are supplied with cast-in serpentine cooling tubes with cast-in NPT fittings on the heater bottoms for water connections
- Electrical terminations locations on top of heaters

Motor with AC or DC variable speed.

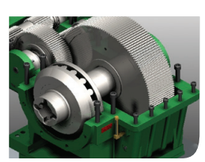
- Externally ventilated or fan cooled
- Can be mounted on either side of extruder with reducer input shaft extending toward the front or rear of machine
- Motor mounting plate is movable to adjust belt tension when belt driven and rigid when direct coupled





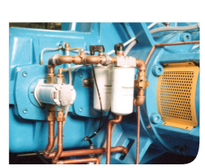
Gear Drive Reducer specifically designed by Davis-Standard.

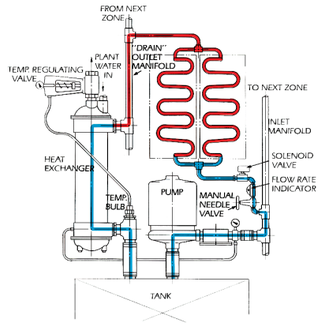
- Heavy-wall, two-piece iron housing
- Input shaft driven forced lubrication system
- Single helical AGMA quality gearing class 11 or better
- All shafts supported on single row, tapered roller bearings
- High capacity cylindrical roller thrust bearing mounted in integral thrust housing



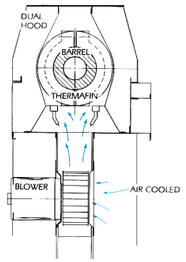
Oil circulation system for improved performance.

- Input shaft mounted positive displacement oil pump
- 24 micron oil filter with differential pressure indication
- Water-cooled heat exchanger





Water Cooling System



Air Cooling System

Barrel Temperature Control Systems

WATER COOLING

Davis-Standard's water cooling systems are engineered to handle any polymer and plant condition with efficiency and high performance.

- Positive cooling is provided to each barrel cylinder zone by stainless steel cooling coils.
- Coils are cast into customized cast aluminum finless heating units, parallel to the cast-in heating elements.
- Each barrel zone has two mated heater halves, bolted together to maintain constant contact to the barrel during warm-up and operation.

Davis-Standard recommends a completely packaged closed loop water-to-water heat exchanger system where cooling water is circulated by a high capacity stainless steel pump from the reservoir through a distribution manifold into the zoned cooling coils.

- Three-mode controller actuates a solenoid valve whenever cooling is required.
- Exact cooling rate in each zone is regulated by a manual needle valve with virtual flow indicator.
- After passing through the cooling coils on the barrel, steam and water are returned through an exhaust manifold for cooling in the heat exchanger, and then passed into a reservoir.
- A temperature regulating valve provides flow control of plant cooling water.
- An insulated barrel hood is completely closed on top for to protect the heats and wiring from accidental material spillage during hopper filling.
- All extruders pre-piped to permit immediate hook-up to plant cooling water supply upon arrival.

AIR COOLING

The combination of Davis-Standard's air cooling system and patented Thermafin® heaters provide the most economical method of barrel temperature control in the industry. These systems are adequate for all but the most demanding processes where water-cooling is required.

- Large blower motors provide high air-flow capacity.
- Cool air is blown up through the individual heater mounted shrouds.
- The air passes between the heater fins, exits the top of the shroud, and flows between the outside of the shroud and the insulated barrel hoods.
- The airflow exits the bottom of the hoods, opposite the operator side of the machine for maximum operator comfort.
- The extruder hood is completely closed on top to protect the heaters and blowers from accidental material spillage during hopper filling.

Technical Support, Manufacturing, and Technology

Davis-Standard, LLC operates a fully-staffed technology center in the United States with single and twin screw extruders available for product development, screw rheology, and control technology. We work to supply equipment "On Time, Every Time" by meeting our customers' needs with shorter cycle times, on-time deliveries, and continuous process improvement. A reliable and vast network of suppliers helps ensure quality equipment while keeping our pricing competitive.

24/7 CUSTOMER SERVICE/AFTERMARKET SERVICES

We have service technicians available 24 hours a day, seven days a week, to handle parts inquiries and emergency service needs. Parts shipments, if in stock, can be shipped within one day. We maintain complete mechanical and spare parts inventories ranging from feedscrews and barrels, to thermocouples and motors. On-site service by a technician is also available. For parts and service call +800-480-8105.

R&D CAPABILITIES

Research and development center in the United States enables us to research, test, and supply custom feedscrew designs.

QUALITY MATERIALS

Feedscrews manufactured from a variety of metals for corrosion and wear resistance.

SCREWS FOR EVERY APPLICATION

Screw sizes range from 3/4-inch (20 mm) to 12-inches (305 mm) for single screw, 40mm to 140mm for counter-rotating twin screw, and 32mm to 130mm for co-rotating fully intermeshing twin screw extruders. Screws, including smooth and groove feed designs, can be customized for specific applications.

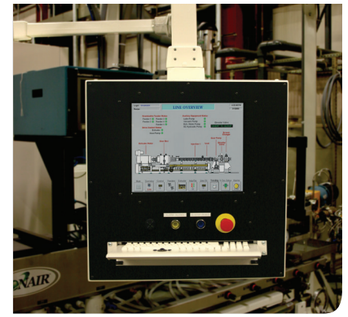
PROVEN TECHNOLOGY

Our DSB® and DSBM™-T barrier screw technologies are known worldwide for consistently higher output rates, process stability, venting and devolatilization capabilities, distributive and dispersive mixing properties, and minimized polymer degradation.

CONTROL SYSTEMS

The EPIC III™ color, touch-screen operator interface and supervisory control system offers a complete solution for complex lines. This system features pictorial control screens, trending, SPC/SQC networking and other data acquisition capabilities. Discrete controls and mid-level MESA III control systems are also available. All systems are custom engineered in-house for reliability.

Technical Center



EPIC III™ Control System