Thermatic® Extruder Specifications

Extruder Size	L/D Ratio		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	17.56:1	35 (26) / 1.25 S.F.	2,730,000	10,000 (690)
2 in. (50mm)	24:1	30:1	17.56:1	35 (26) / 1.25 S.F.	398,000	10,000 (690)
2 ½ in. (65mm)	24:1	30:1	17.26:1	160 (119) / 1.25 S.F.	544,000	10,000 (690)
3 in. (75mm)	24:1	30:1	17.26:1	160 (119) / 1.25 S.F.	179,000	10,000 (690)
3 ½ in. (90mm)	24:1	30:1	17.39:1	257 (192) / 1.25 S.F.	421,000	10,000 (690)
4 in. (100mm)	24:1	30:1	17.39:1	257 (192) / 1.25 S.F.	192,000	10,000 (690)
4 ½ in. (115mm)	24:1	30:1	17.49:1	400 (298) / 1.50 S.F.	453,000	10,000 (690)
5 in. (130mm)	24:1	30:1	17.49:1	400 (298) / 1.50 S.F.	192,000	10,000 (690)
6 in. (150mm)	24:1	30:1	16.88:1	700 (522) / 1.50 S.F.****	509,000	10,000 (690)
6 ½ in. (165mm)	24:1	30:1	16.88:1	700 (522) / 1.50 S.F.****	300,000	10,000 (690)
7 in. (175mm)	24:1	30:1	16.88:1	700 (522) / 1.50 S.F.****	202,450	7,000 (483)
8 in. (200mm)	24:1	30:1	17.21:1	1,420 (1,059) / 1.50 S.F.	103,500	10,000 (690)
9 in. (225mm)	24:1	30:1	17.21:1	1,420 (1,059) / 1.50 S.F.	90,600	7,000 (483)
10 in. (250mm)	24:1	30:1	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.
**** DRV ratings are 530 HP (395 kW).

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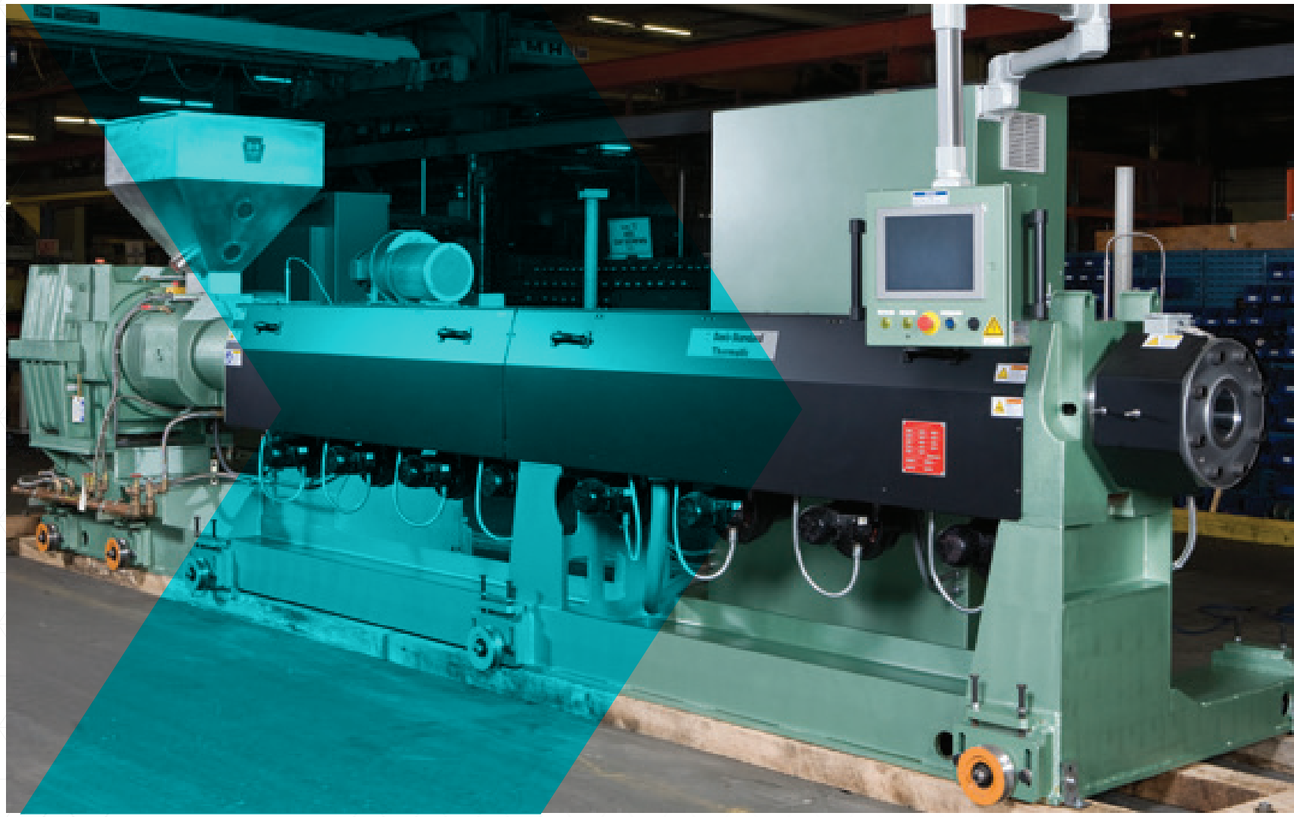

Thermatic® Extruders

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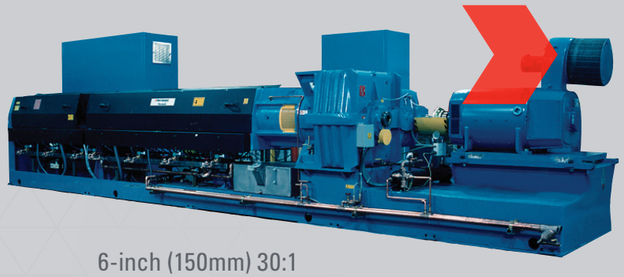
4 ½ inch (115mm) 34:1 L/D
Vented Air-Cooled Thermatic®

2 ½ inch (65mm) 48:1 L/D

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



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

Overview

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.

Features

- Base features a rugged steel construction
- Barrel for 10,000 psi operating pressure
- Air-cooled or water-cooled systems based on process requirements
- Heaters are precision bored and securely bolted to the barrel
- AC Motor with variable speed drive
- Davis-Standard gear reducer specifically designed for extruder applications
- Oil circulation system for improved performance

Extruder Base

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

Extruder Barrel

- Wear-resistant liner of iron/boron bimetallic material cast into a 4140 steel barrel assembly (harder alloys available)
- Integral liner/jacket construction provides maximum heat transfer efficiency and multi-zone feature
- Temperature control via external water circulating unit or customer plant, or chilled water supply
- Barrel designed for operating pressure up to 10,000 psi
- Operating temperatures range from water supply temperature to 250°F (121°C)
- Barrel supplied with rupture disc for overpressure protection

Air-Cooled or Water-Cooled Systems

- Air-cooled or water-cooled systems based on process requirements
- For air-cooled extruders, air blowers are mounted on individual heater shrouds
- Air exits the hoods at the top
- For water-cooled extruders, system is comprised of stainless steel tank, pump, manifolds and valving, flexhoses, and water-to-water heat exchangers
- Wetted metal parts are either stainless steel or brass

Heaters

- Precision bored and securely bolted to the barrel
- Cast aluminum or cast bronze available depending on process requirements
- 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 location on top of heaters

AC Motor

- 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

Davis-Standard Superior Gearcase

- Horizontally mounted double reduction parallel shaft reducer with integral thrust bearing for simplicity and economy
- Single reduction gearcase for 1 1/2-inch (40mm) and 2-inch (50mm) extruders
- Leak-free, non-contacting labyrinth oil seals never wear out, eliminating expensive oil seal maintenance
- Thrust shaft is mounted on pre-loaded radial bearings to maintain perfect screw-to-barrel alignment in spite of heavy bull gear radial loading
- Single helix gear teeth for quiet, vibration-free operation
- All gearing machined to AGMA Class 11 specifications
- Lubrication supplied to the gears and bearings by an externally mounted, positive displacement gear pump to provide ample oil through the entire RPM range

Oil Circulation System

- Positive displacement oil pump
- 24 micron oil filter with differential pressure indication
- Oil-to-water heat exchanger

Thermatic® Extruder