

CONICAL TWIN SCREW EXTRUDERS

PROCESSING
PRODUCTION &
PROFITABILITY



 **MILACRON**

 **CINCINNATI
MILACRON**

Extrusion Systems

All specifications reflect average values based on typical machine layouts. Actual figures will vary depending on final machine configuration. If you require more specific data, consult a certified installation print for your particular machine. Performance specifications are based on theoretical data. Shipping weights reflect average historical values. Due to continual improvements, specifications are subject to change without notice.

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CONICAL TWIN SCREW EXTRUDER SPECIFICATIONS

		TC35		TC50		TC55		TC65		TC80		TC86		TC92		TC96	
		ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
Screws	Number of screws:	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Screw diameter, front/rear (in.) (mm):	1.38/2.95	35/75	2.16/4.49	55/109	2.16/4.49	55/114	2.56/5.20	65/132	3.14/6.13	80/156	3.38/6.9	86/175.5	3.67/7.24	92/184	3.78/7.95	96/202
	Length to front diameter ratio:	23D	23D	22D	22D	22D	22D	22D	22D	23D	23D	27D	27D	27.2D	27.2D	30D	30D
	Direction of rotation:	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.	Counter Rot.
	Speed range (rpm) (min ⁻¹):	10 to 50	10 to 50	2 to 30	2 to 30	2 to 42	2 to 42	2 to 35	2 to 35	7 to 33	7 to 33	0 to 33	0 to 33	7 to 34	7 to 34	0 to 34	0 to 34
Electrical Specifications	Available torque per screw maximum (ft./lbs.) (Nm):	640	820	2,490	3,380	2,490	3,380	3,710	5,030	5,900	8,000	9,957	13,500	11,250	15,250	14,390	19,510
	Total available torque maximum (ft./lbs.) (Nm):	1,302	1,740	4,980	6,760	4,980	6,760	7,420	10,060	11,800	16,000	19,914	27,000	22,500	30,500	28,780	39,020
	Motors 460V, 3 phase, 60Hz (1) Reliance AC (Amps):	23	23	46	46	72	72	88	88	122	122	156	156	272 (4)	272 (4)	237	237
	Barrel, die & screw temp. con. hrs. 230V, 3 phase, 60Hz (Amps):	46	46	125	125	125	125	186	186	234	234	230/290 (5) (6) 230/290 (5) (6)	230/290 (5) (6) 230/290 (5) (6)	182 (5) (6)	182 (5) (6)	206 (5) (6)	206 (5) (6)
	Stepdown transformer 460V/230V, 3 phase, 60Hz, kVA rating:	30	30	51	51	51	51	75	75	93	93	51/75	51/75	45	45	51	51
Air & Water Requirements	Isolation transformer for Reliance AC drive and motor (1) (kVA):	20	20	34	34	40	40	51	51	75	75	145	145	145/118	145/118	220	220
	Isolation transformer for other DC drives and motors (1) (kVA):	20	20	N/A	N/A	45	45	63	63	93	93	175	175	175/145	175/145	225/275	225/275
	Minimum air pressure (psi) (bar):	NA	NA	NA	NA	NA	NA	NA	NA	40	2.8	NA	NA	40	2.8	40	2.8
	Air supply connection pipe size (in.):	NA	NA	NA	NA	NA	NA	NA	NA	0.25	0.25	NA	NA	0.5	0.5	0.5	0.5
	Minimum water pressure (psi) (bar):	50	3.5	50	3.5	50	3.5	50	3.5	50	3.5	50	3.5	50	3.5	50	3.5
Machine Dimensions Overall	Maximum water temperature (deg. F) (deg. C.):	68	20	68	20	68	20	68	20	68	20	68	20	68	20	68	20
	Average water consumption (gpm) (m ³ /h):	6	1.4	9	2.0	9	2.0	9	2.0	12	2.7	13.5	3	20	4.5	20	4.5
	Water supply connection pipe size (in.):	0.75	0.75	0.50	0.50	0.50	0.50	0.50	0.50	0.75	0.75	0.75	0.75	1.0	1.0	1.0	1.0
	Water drain connection pipe size (in.):	1.25	1.25	0.50	0.50	0.50	0.50	0.50	0.50	0.75	0.75	0.75	0.75	1.25	1.25	1.25	1.25
	Vacuum pump exhaust pipe size (in.):	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.75	1.75	1.25	1.25	1.25	1.25
Drive Train Specifications	Average cooling tower load (tons) (kW):	3	10	5	18	5	18	6	21	8	28	6.7	24	10	36	10	36
	Total length without entry adapter (in.) (mm):	98.4	2,500	113.4	2,880	113.4	2,880	123.2	3,130	189	4,800	196	5,000	236	6,000	270	6,856
	Width (in.) (mm):	37.8	960	55.5	1,410	55.5	1,410	55.5	1,410	41	1,036	55	1,400	47	1,200	56	1,421
	Height with starve feeder and hopper (in.) (mm):	82	2,080	103.3	2,625	103.3	2,625	103.3	2,625	91	2,312	104	2,650	104.2	2,647	93	2,352
	Extrusion height center line (in.) (mm):	39.4	1,000	40	1,015	40	1,015	40	1,015	40	1,015	43.3	1,100	43.3	1,100	43.31	1,100
Heating and Cooling	Extruder weight, approximate (lbs.) (kg):	2,770	1,260	6,500	2,955	6,500	2,955	6,800	3,090	12,700	5,760	18,000	8,150	21,000	9,500	25,000	11,365
	Motor rating (hp) (kW):	12	9	25	18.6	40	30	50	37	75	56	125	93	150/125	112/93	200	150
	Motor base speed (rpm) (min ⁻¹):	1,600	1,600	1,750	1,750	2,500	2,500	2,100	2,100	2,500	2,500	1,750	1,750	1,750	1,750	1,750	1,750
	Total gear reduction:	1:32	1:32	1:59	1:59	1:59	1:59	1:59	1:59	1:76	1:76	53	53	1:50	1:50	1:50	1:50
	Continuous maximum load (lbs.) (kN):	13,900	62	34,000	153	34,000	153	48,000	214	73,000	324	84,530	376	92,000	409	92,000	409
Maximum Output Rates	Short term maximum load (lbs.) (kN):	17,400	77	43,000	191	43,000	191	60,000	267	91,000	404	105,660	470	115,000	512	115,000	512
	Dynamic bearing load rating (lbs.) (kN):	27,000	120	227,000	1,010	227,000	1,010	227,000	1,010	183,000	815	247,290	1,100	275,000	1,200	275,000	1,200
	Screw thrust measuring device:	N/A	N/A	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric
	Number of barrel heating zones:	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
	Total barrel heating capacity (kW):	11	11	19.5	19.5	19.5	19.5	28.5	28.5	43	43	54	54	86	86	100	100
	Number of barrel cooling zones:	2	2	3	3	3	3	3	3	3	3	3	3	4	4	4	4
	Barrel cooling medium:	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water	HTF or Water
	Number of screw temperature control zones:	1	1	1	1	1	1	1	1	1	1	1	1	1 or 2	1 or 2	1	1
	Total screw heating capacity (kW):	9	9	9	9	9	9	9	9	9	9	9	9	12 or 21	12 or 21	12	12
	Number of die zones including entry adapter:	5	5	4	4	6	6	6	6	8	8	8	8	6	6	8	8
	Die heating capacity maximum (kW):	12.5	12.5	22.5	22.5	22.5	22.5	37.5	37.5	41	41	51/75	51/75	45	45	51	51
	Rigid PVC pipe or sheet (lbs./hr.) (kg/hr.):	25 to 175	11 to 89	50 to 275	23 to 125	200 to 600	90 to 270	300 to 800	135 to 365	500 to 1,300	227 to 590	500 to 1,900	227 to 860	1,200 to 2,200	554 to 1,000	N/A	N/A
	Rigid PVC profile (lbs./hr.) (kg/hr.):	25 to 150	11 to 68	50 to 200	23 to 91	80 to 450	35 to 205	200 to 650	90 to 295	300 to 900	135 to 410	400 to 1,200	182 to 550	N/A	N/A	N/A	N/A
	Rigid PVC siding (7) (lbs./hr.) (kg/hr.):	N/A	N/A	N/A	N/A	80 to 500	35 to 225	200 to 650	90 to 295	600 to 1,200	273 to 545	600 to 1,700	273 to 770	1,000 to 2,000	454 to 909	N/A	N/A
	Rigid PVC pelletizing (2) (3) (lbs./hr.) (kg/hr.):	N/A	N/A	N/A	N/A	To 600	To 270	To 800	To 365	To 1,200	To 545	To 2,000	To 910	2,500	1,136	N/A	N/A
	Flexible PVC pelletizing (2) (3) (lbs./hr.) (kg/hr.):	N/A	N/A	N/A	N/A	To 800	To 365	To 1,000	To 455	To 1,500	To 682	To 2,200	To 1,000	To 3,000	1,364	N/A	N/A
	WPC (lbs./hr.) (kg/hr.):	N/A	N/A	N/A	N/A	To 350	To 160	To 500	To 230	To 850	To 385	To 1,400	To 635	To 1,700	To 775	1,440 to 2,600	655 to 1,180
	Output rates are based on ExtrusionTek Milatron formulations, with a bulk density of 40 lb/ft ³ or 640 g/L. Output also dependent on size and weight of product, tooling design and formulation.																
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	(2) Granmer feeder needed to obtain rated output.																
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9.18.04