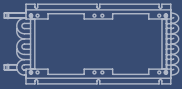
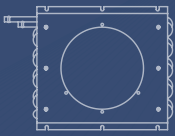


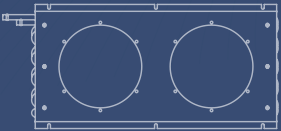
Model**720**



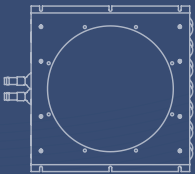
Model**721**



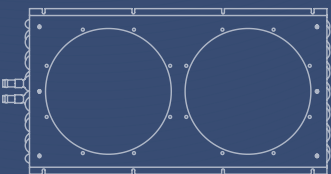
Model**722**



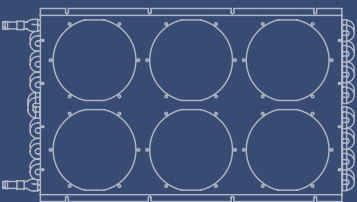
Model**723**



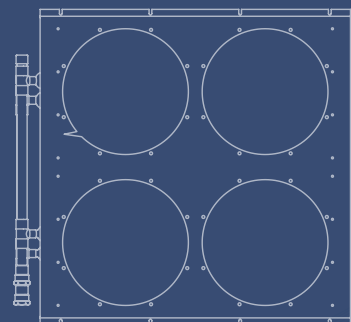
Model**724**



Model**725**

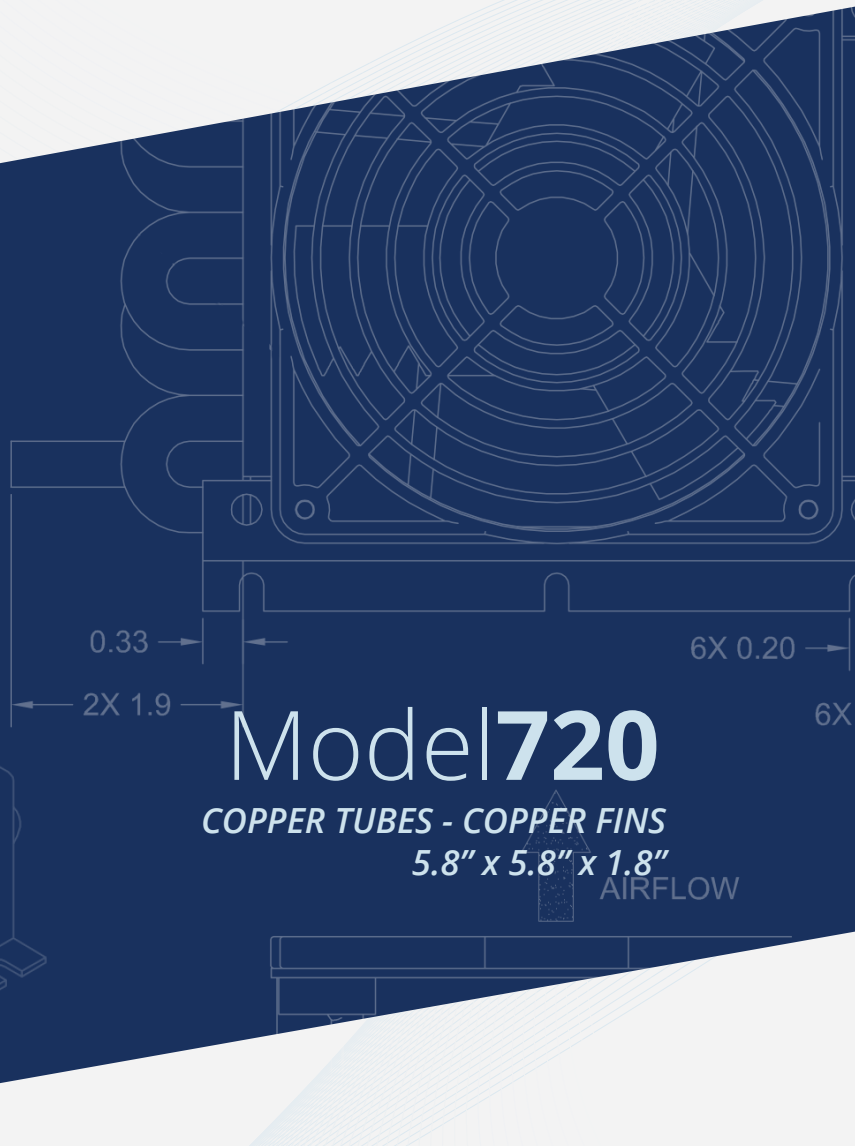


Model**726**



Model**727**

72series



Model**720**

COPPER TUBES - COPPER FINIS
5.8" x 5.8" x 1.8"

THERMATRON ENGINEERING, INC.

////// THERMAL MANAGEMENT FOR ELECTRONICS

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Model 720

THERMATRON 72 SERIES HEAT EXCHANGERS

Model 720 is the smallest standard size of the Thermatron Engineering 72 Series Heat Exchanger Family. Built to market-highest quality standards Model 720 provides maximum reliability heat transfer for closed-loop cooling in computer systems, telecommunications and power cabinets, medical devices, military products, test chambers, machine tools, chillers, and many diverse high-end electronics applications. Thermatron also manufactures many custom configurations of Model 720 per specific dimensional and performance requirements. Please consult the factory for your application requirements.

SUMMARY

MATERIALS: Copper tubes and Copper fins

SIZE: Air flow area 5" X 5", standard mounting receives (1) 119 mm fan

WEIGHT: 2.2 lbs (no fan), 3.5 lbs (with fan)

FIN GEOMETRY: Thermatron's unique riffled & corrugated wavy fin, stacked 16 fins per inch, full collared

TUBE GEOMETRY: 0.375" OD tubes arranged (2) rows of (6) tubes per row, total (12) tubes

TUBE CIRCUIT: Generally one all-series circuit, but also available with parallel circuits for lower coolant pressure drop applications.

MAX RECOMMENDED FLOW: 2 GPM with standard all-series circuit

COMPATIBILITY: Benign coolants with benign gases---water, ethylene or propylene glycol mixtures, methanol or ethanol, mineral oils, synthetic coolants, common refrigerants, etc. exchanging with room air at moderate temperatures

MAX OPERATING PRESSURE: 150 PSIG continuous duty (higher pressure ratings available upon request)

MAX OPERATING TEMPERATURE: 316C

MAX FAN OPERATING TEMPERATURE: 60C typical

FITTINGS: 3/8" or 1/2" OD tubes, 3/8" AN flare nuts, 3/8" or 1/2" hose beads, 1/4" or 3/8" NPTF or NPTM, metric, or any custom fitting specific to the application. All fittings also available with 90 degree bends.

STANDARD FANS: EBM 4500N (115 VAC), EBM 4650N (230 VAC), or EBM 4184NX (24 VDC). Many other alternate fans are available or the heat exchanger can be provided without fans.

THERMAL PERFORMANCE: 20-to-40 W/C pending fan selection and coolant flow (See performance curves)

INTERNAL CLEANLINESS: Computer grade. High temperature / high flow water flush, followed by COBRATEC 99 flush for corrosion inhibition.

RoHS: All standard 72 Series heat exchangers are RoHS compliant. Any alternate fans, sensors or non-standard fittings may affect RoHS compliance.



Shown: 720SLM0



Shown: 720SLM1

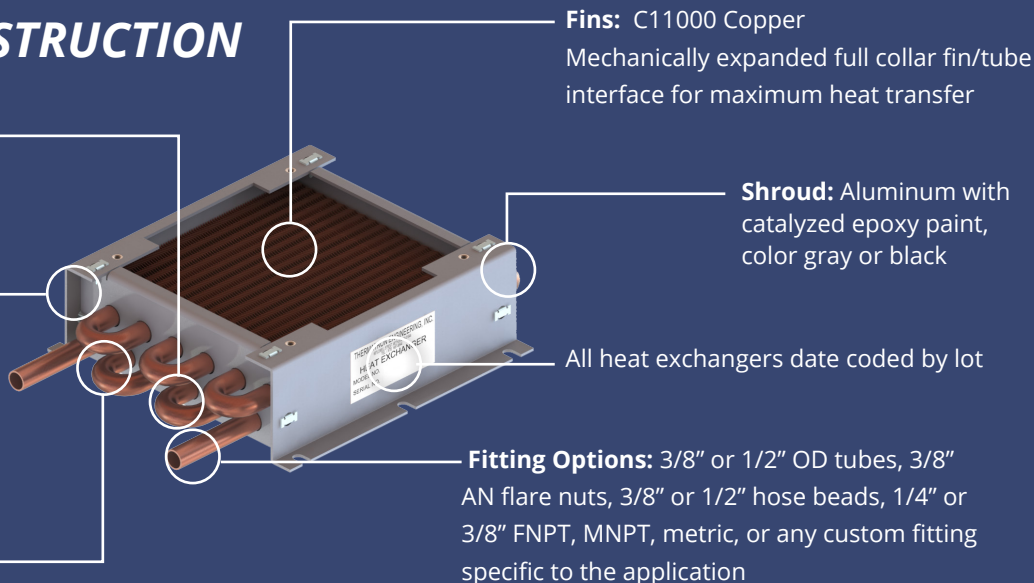
MATERIALS OF CONSTRUCTION

72 Series/Model 720

Metal joining: All joints fluxless silver brazed with internal Argon purge

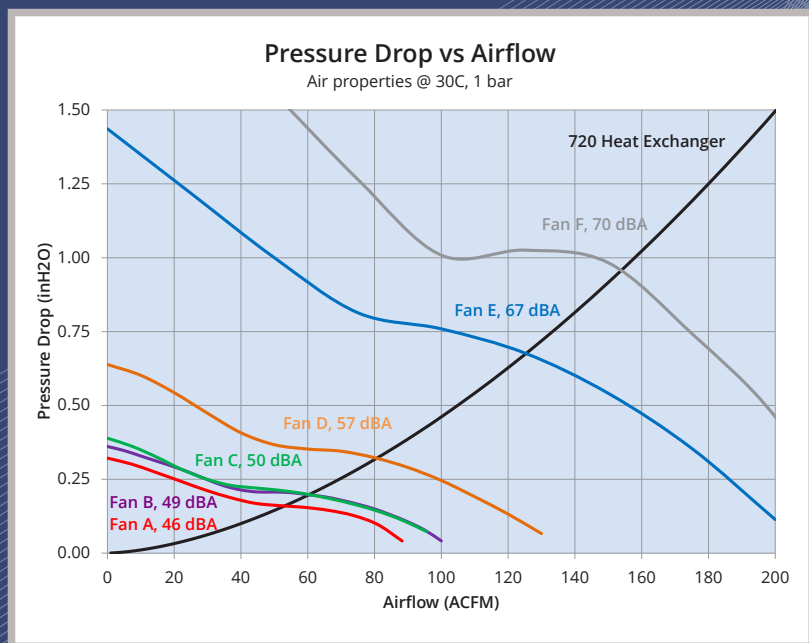
100% pressure tested: 150 PSIG Nitrogen under water. Inspector scribes their unique ID code at this location confirming successful pressure test.

Wetted Interior: C12200 Copper



Model 720

THERMATRON 72 SERIES HEAT EXCHANGERS



FAN SELECTION

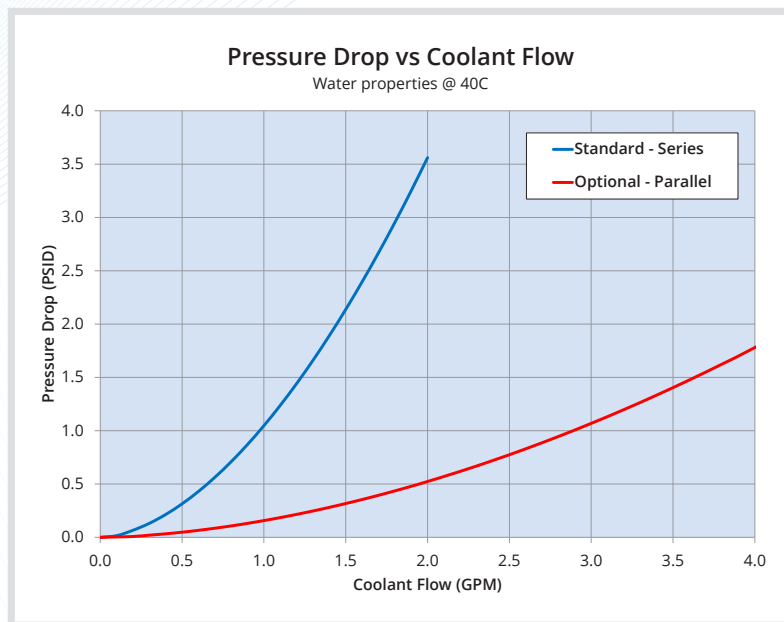
PRESSURE DROP VS AIRFLOW

The intersection of the heat exchanger pressure curve (black curve) with the chosen fan performance curve is the expected air flow through the heat exchanger, assuming no other air flow restrictions. As a baseline, the red, purple, and green curves represent the standard fans for 230VAC, 24VDC, and 115VAC. If higher thermal performance is required, one of the stronger (and louder) fan options can be selected to increase the airflow.

PUMP SELECTION

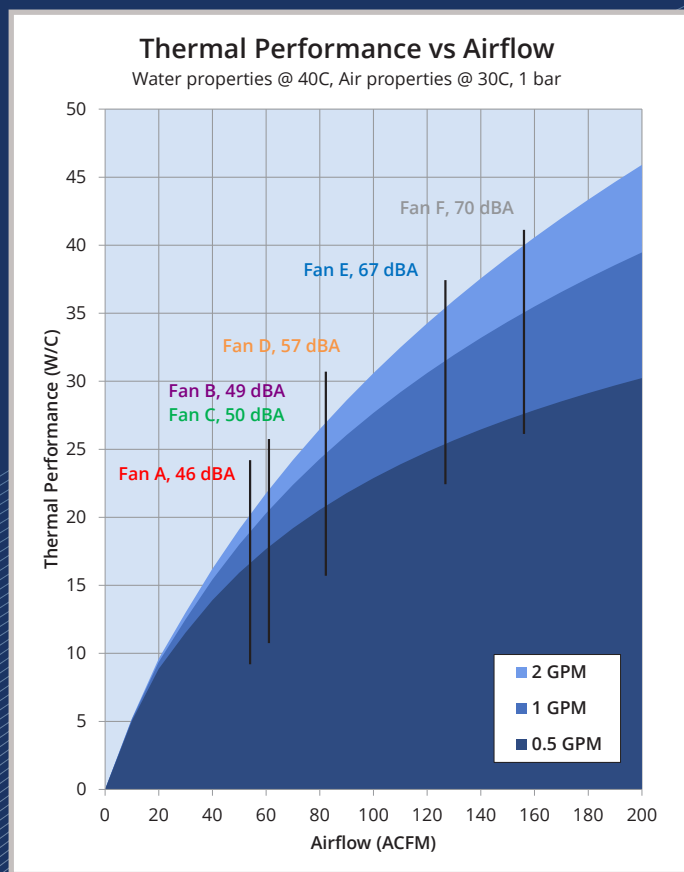
PRESSURE DROP VS COOLANT FLOW

The Model 720 Heat Exchanger standard plumbing configuration has all 12 tubes connected in one series circuit. This maximizes coolant velocity and thermal performance but also increases coolant pressure drop as shown by the blue line. Maximum recommended flow is 2 GPM for the series circuit in order to avoid long-term erosion corrosion. For higher coolant flow or lower desired pressure drop, the plumbing configuration can be split into two (or more) parallel circuits as shown by the red line. Splitting the flow in this way results in a small decrease in thermal performance of approximately 5%. Please contact Thermatron Engineering directly to discuss specific application requirements.



Model 720

THERMATRON 72 SERIES HEAT EXCHANGERS



PERFORMANCE

THERMAL PERFORMANCE VS AIRFLOW

Heat exchangers require some temperature difference between the liquid and air entering the heat exchanger in order to dissipate heat, the larger this temperature difference, the more heat a given heat exchanger can dissipate. The thermal performance of all Thermo-tron Engineering heat exchangers is rated as follows:

COOLING THE WATER:

$$\text{PERFORMANCE (W/C)} = \frac{\text{HEAT LOAD (W)}}{\text{WATER TEMP ENTER HX (C)} - \text{AIR TEMP ENTER HX (C)}}$$

COOLING THE AIR:

$$\text{PERFORMANCE (W/C)} = \frac{\text{HEAT LOAD (W)}}{\text{AIR TEMP ENTER HX (C)} - \text{WATER TEMP ENTER HX (C)}}$$

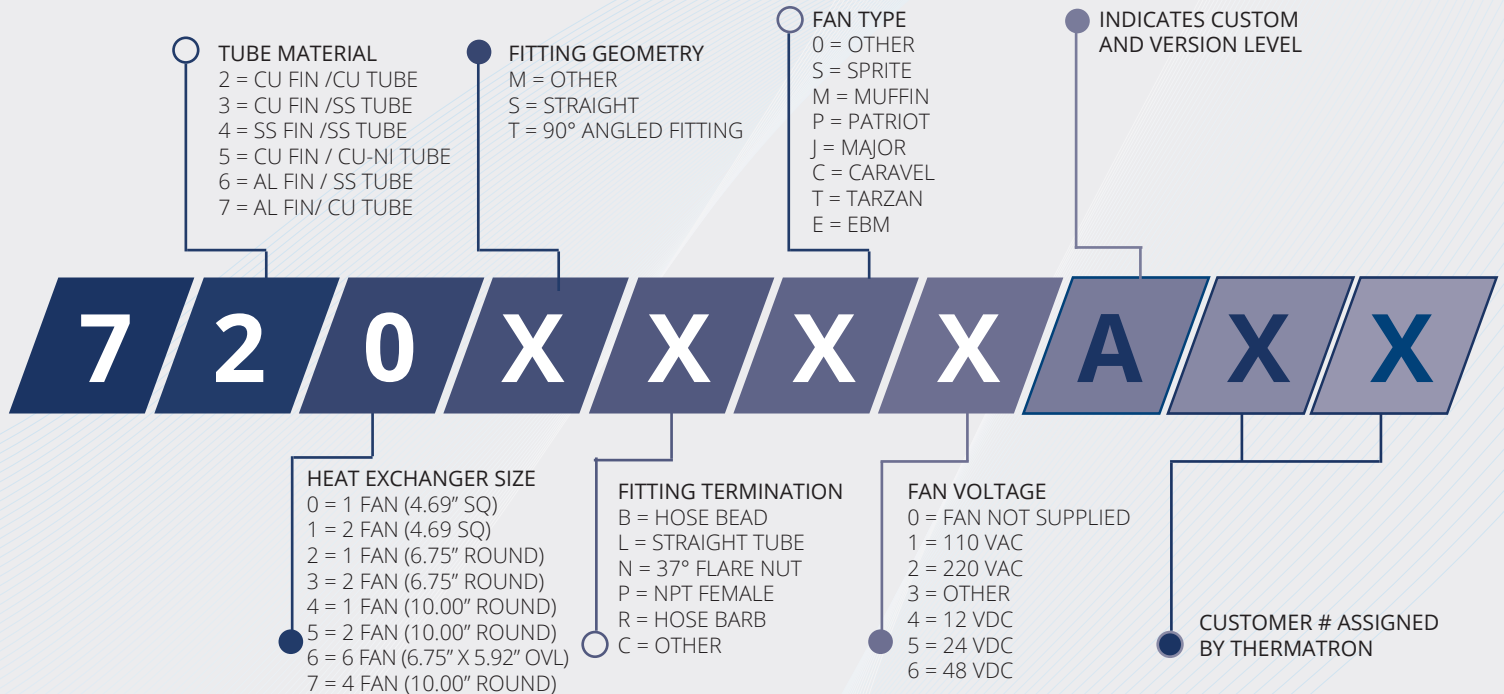
TABULATED PERFORMANCE

HEAT EXCHANGER	FAN	FAN P/N	FAN VOLTAGE	FAN NOISE	AIRFLOW & PRESSURE DROP	WATER FLOW & PRESSURE DROP	HEAT LOAD WHEN: (WATER TEMP IN) - (AIR TEMP IN) =			
							1C	10C	30C	50C
MODEL 720	FAN A	(1) EBM 4650N	230VAC, 50Hz	46 dB(A)	54 ACFM @ 0.16 inH2O	0.5 GPM @ 0.3 PSID	18.3 W	182.9 W	548.6 W	914.3 W
						1.0 GPM @ 1.0 PSID	19.8 W	198.4 W	595.1 W	991.9 W
						2.0 GPM @ 3.6 PSID	20.7 W	207.1 W	621.3 W	1035.6 W
MODEL 720	FAN B	(1) EBM 4184 NX	24VDC	49 dB(A)	61 ACFM @ 0.19 inH2O	0.5 GPM @ 0.3 PSID	19.7 W	197.4 W	592.1 W	986.8 W
						1.0 GPM @ 1.0 PSID	21.6 W	215.8 W	647.4 W	1079.0 W
						2.0 GPM @ 3.6 PSID	22.6 W	226.3 W	678.9 W	1131.5 W
MODEL 720	FAN C	(1) EBM 4600 N	115VAC, 60Hz	50 dB(A)	61 ACFM @ 0.19 inH2O	0.5 GPM @ 0.3 PSID	19.7 W	197.4 W	592.1 W	986.8 W
						1.0 GPM @ 1.0 PSID	21.6 W	215.8 W	647.4 W	1079.0 W
						2.0 GPM @ 3.6 PSID	22.6 W	226.3 W	678.9 W	1131.5 W
MODEL 720	FAN D	(1) EBM 4184 NXH	24VDC	57 dB(A)	82 ACFM @ 0.32 in H2O	0.5 GPM @ 0.3 PSID	23.5 W	235.1 W	705.2 W	1175.3 W
						1.0 GPM @ 1.0 PSID	26.2 W	262.4 W	787.3 W	1312.1 W
						2.0 GPM @ 3.6 PSID	27.9 W	278.6 W	835.7 W	1392.8 W
MODEL 720	FAN E	(1) EBM 4114 NH4	24VDC	67 dB(A)	127 ACFM @ 0.66 in H2O	0.5 GPM @ 0.3 PSID	29.6 W	296.3 W	888.9 W	1481.6 W
						1.0 GPM @ 1.0 PSID	34.3 W	342.6 W	1027.7 W	1712.8 W
						2.0 GPM @ 3.6 PSID	37.1 W	371.4 W	1114.3 W	1857.2 W
MODEL 720	FAN F	(1) EBM 4114 N/2H5	24VDC	70 dB(A)	156 ACFM @ 0.94 in H2O	0.5 GPM @ 0.3 PSID	32.7 W	326.8 W	980.3 W	1633.9 W
						1 GPM @ 1.0 PSID	38.5 W	384.6 W	1153.8 W	1923.0 W
						2 GPM @ 3.6 PSID	42.2 W	421.8 W	1265.4 W	2108.9 W

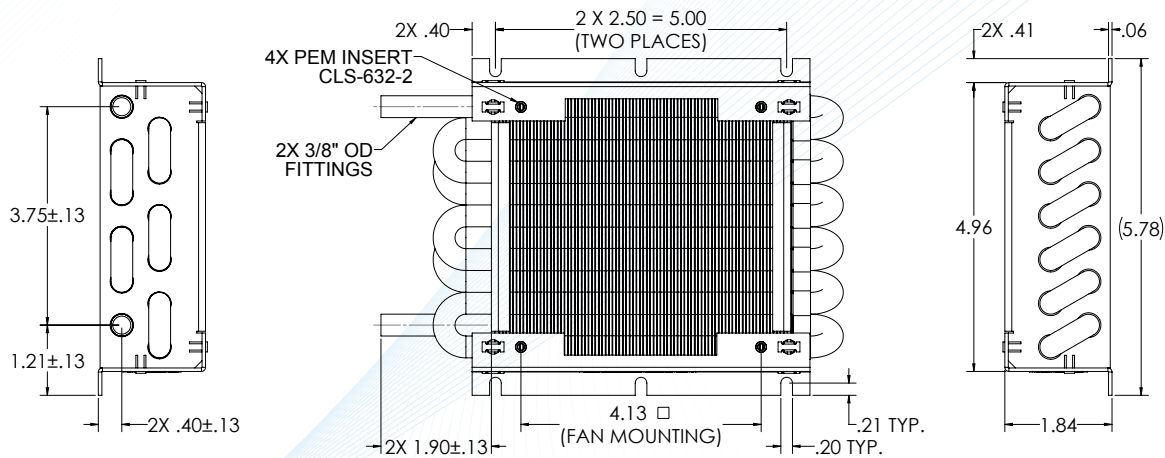
Model 720

THERMATRON 72 SERIES HEAT EXCHANGERS

STANDARD PART NUMBERING SYSTEM



DRAWING 720SLM0



MORE MODEL 720 DRAWINGS

[720SBM0](#)

[720SLM0](#)

[720SNM1](#)

[720SPM2](#)

[720TBM3](#)

[720TPM0](#)

[720SBM1](#)

[720SLM1](#)

[720SNM2](#)

[720SPM5](#)

[720TLM0](#)

[720TPM1](#)

[720SBM2](#)

[720SLM2](#)

[720SPM0](#)

[720TBM0](#)

[720TLM1](#)

[720TPM2](#)

[720SBM4](#)

[720SNM0](#)

[720SPM1](#)

[720TBM2](#)

[720TNM0](#)

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