



GF CALORPLAST® Heat Exchangers

7-10 day lead time on catalog products



Plating and Metal Surface Finishing



In the Plating and Metal Surface Finishing industries in particular, heating and cooling of chemical solutions is critical. In electroplating the process parameters and chemicals used have a significant influence on the final outcome. Likewise, in metal surface finishing, the regulating of temperatures and the use of aggressive chemicals, such as acids, are key to proper material processing. A key component for both of these applications are the heat exchangers that provide the precise temperature control needed to be successful.

Steam, water and water/glycol have proven to be the most reliable and also safest heating and cooling media in these, and similar aggressive production environments.

Under these conditions, GF Piping Systems relies on the proven and tested reliability of CALORPLAST internal (in-tank) and external heat exchangers for heating and cooling of process baths. With their flexible configurations and large heat transfer surface areas, these modular heat exchangers provide the perfect solution to your heating and cooling needs.

+ Advantages

- Non-contaminating
- Non-conducting
- Resists etching
- Ease of installation
- Low maintenance costs

Chemical Processing



In Chemical Processing applications where aggressive acids and corrosive solutions are a common occurrence, customers need precise temperature control capabilities without sacrificing superior chemical and corrosion resistance. While the basic functions of heating and cooling are significant factors that affect final process output, they are not the only factors. CALORPLAST heat exchangers from GF Piping Systems provide an excellent balance of chemical resistance and cost effectiveness and have virtually zero leach-out into the process chemicals.

Applications that have historically used metal heat exchangers, even those manufactured from exotic metals, often do not represent the best choice due to both compromised service life, high maintenance costs, and in cases where corrosive conditions are a factor, a high cost-to-performance ratio.

Developed with strong acids and corrosive substances in mind, CALORPLAST heat exchangers offer clean, safe, and efficient heat transfer capabilities in the most demanding chemical manufacturing processes.

+ Advantages

- No rust or corrosion
- Highly chemical resistant
- Virtually no leach-out
- Cost competitive
- Minimal maintenance requirements

GF CALORPLAST® Immersion-Style (In-Tank) Heat Exchangers

GF CALORPLAST immersion-style heat exchangers are an all-plastic fabrication, designed for in-tank applications where the heat exchanger is in full contact with both internal and external solutions.

Benefits

- Designed for the heating and cooling of highly corrosive chemicals
- Consistent performance over the life of the heat exchanger
- Resists chemical attack at elevated temperatures
- Full range of cost effective standard catalog sizes and configurations
- Modular elements allow custom configurations and size options for specific applications
- Available in PE-RT and PVDF

Applications

Plating and Metal Processing

Utilized in applications for cleaning, etching, pre-plate process, plating and other aggressive chemicals. Made from non-corrosive, non-conductive materials designed specifically to maintain optimal performance in critical applications. Used to cool plating tanks to maintain temperatures when a rectifier load is applied to the plating solution.

Chemical Processing

Commonly used for heating and cooling of acids and caustics, cooling of exothermic reactions, most commonly Sulfuric Acid dilution and evaporator systems. They are also used in applications where metal heat exchangers can be compromised when buildup of solid residue occurs.

Semiconductor and Pharmaceutical

Provides heating and cooling of aggressive chemicals and process cooling water. Superior chemical and thermal qualities allow the heat exchangers to be cleaned or sanitized with pressurized water, saturated steam or other chemical detergents.

GF CALORPLAST® Tube-Plate External Heat Exchangers

GF CALORPLAST tube-plate heat exchangers are an external heat exchanger designed for use in stand-alone application and are ideally suited for heat transfer between low-viscosity fluids. Tube-plate heat exchangers are suitable for clean and moderately polluted media.

Benefits

- Designed for maximum effectiveness with most low-viscosity fluids
- Modular fabrication allows for scalability to fit specific applications
- When installed vertically, the design allows for larger heat transfer areas while maintaining a small footprint
- Can be mounted either horizontally or vertically
- Available in PE-RT and PVDF

Applications

Plating and Metal Processing

Optimized for applications where either internal tank space is limited or where tanks are recirculated by means of an overflowing weir design. Used to cool solutions against temperature rise caused by the application of exothermic and electrical loads.

Aquariums and Sea life Support

Generally used in aquariums and zoo exhibits for heating and cooling of critical aquatic life support systems (ALSS). Provides an excellent non-contaminating solution, as it will not rust or corrode and can be disinfected using controlled amounts of ozone and UV.

Renewable Energy

Frequently found in the cooling of chemicals used in the production of batteries. Also used for the cooling of the highly acidic and corrosive chemicals that are often found in large capacity electrical storage facilities.



GF CALORPLAST® Shell and Tube Heat Exchangers

GF CALORPLAST shell and tube heat exchangers feature a compact design and a very high heat transfer performance due to the use of thin-walled, non-fouling tubes. With minimal crevices and low levels of extractables; when fabricated in PVDF these heat exchangers are the superior choice for heating and cooling in high-purity water applications.

Benefits

- Suitable for high-purity (HP) water applications*
 - * Special cleaning and packaging available for HP applications
- Very high heat transfer performance with low pressure loss and minimal space requirements
- Modular fabrication allows for scalability to fit specific applications
- Can be mounted either horizontally or vertically
- Available in PVDF and PE-RT

Applications

Chemical Processing

Commonly used for heating and cooling of acids and caustics and cooling of exothermic reactions, most commonly Sulfuric Acid dilution. Can be installed as modules in parallel on racks to provide scalable capacity. Non-metallic and low levels of extractables minimize contamination when heating and cooling of refined chemicals is required.

Semiconductor and Pharmaceutical

In applications where critical manufacturing equipment must be supplied with cooled ultra-clean water, shell and tube heat exchangers are a superior choice over other commonly available options. Made from PVDF materials and cleaned for use in applications requiring heating and cooling of high-purity water. Superior chemical resistance allows for use with acidic and caustic chemicals. Installed in either horizontal or vertical configurations as needed to minimize space requirements.

GF CALORPLAST® Gas-Liquid Heat Exchangers

GF CALORPLAST gas-liquid heat exchangers are manufactured entirely from plastics and are commonly used for condensing of gases to extract aggressive chemicals, as well as for recovering heat from a gas for use in other secondary applications.

Benefits

- Used in many industries when there is a necessity to extract hazardous fumes from hot exhaust gases
- Commonly used to exchange heat from a volume of hot gas to a cool liquid solution, or inversely to preheat cool gas utilizing a hot liquid solution
- Available in PE-RT and PVDF

Applications

Plating, Metal Processing, and Chemical Processing

Commonly used for scrubbing of exhaust gases containing aggressive acidic and caustic fumes prior to release into the atmosphere. Can also be used for heat recovery from exhausted gases and exchanged into a liquid media for reuse, with other GF heat exchangers, in secondary heating of other liquid media.

Factory Exhaust/Ventilation

Commonly used in the removal and disposal of CO² in hot exhaust gases readily found in metal processing factories. Can also be used to heat or cool air for circulation in factories during extreme hot and cold climate changes.

Agriculture and Livestock Farming

Commonly used in the removal of Ammonia and Carbon Dioxide CO₂ from indoor shelters and large greenhouses for environmentally friendly disposal. Heated return loop liquid can also be recovered and reused for pre-heating of fresh inlet air, reducing the energy cost of secondary air heating.

Fume Scrubbing and Heat Recovery



Within the metal plating, coating, and chemical production process, the creation of hazardous fumes and also secondary heat generation are common. Because of their chemical resistance and low operating costs, CALORPLAST heat exchangers from GF Piping Systems provide an all-plastic solution that is not only economically advantageous, but is also an environmentally friendly choice over metal or fiberglass units of comparable volume.

When hazardous chemicals must be extracted from exhaust gases prior to release into the atmosphere, the chemical resistance of CALORPLAST heat exchangers provide a superior solution for use with aggressive acidic or caustic fumes. Heat can also be recovered from the exhausted gases and exchanged into a liquid media for reuse in secondary applications. Inversely, heated liquid from other primary applications can be utilized for pre-heating of an inlet gas for a secondary application.

+ Advantages

- Ventilation and air-conditioning technology
- The ventilation of chemical plants and laboratories
- Air-conditioning in agriculture and livestock farming
- Exhaust air treatment in electroplating

Emerging Technologies



The development of new technologies always introduces new challenges, often involving heating and cooling requirements. With its existing portfolio of plastic heat exchangers and with the continued development of new products, CALORPLAST heat exchangers from GF Piping Systems provide the right solution to fit a broad range of applications. Innovative applications include:

Renewable Energies

Following the trend to renewable energies from wind turbines or solar systems, the storage problem of periodically available energy resources gets more and more into the focus of research and development activities. As battery development and production applications continue to evolve, the non-conductive and chemical resistance of CALORPLAST heat exchangers makes them a clear choice for current and future technologies.

Semiconductor

The dynamic nature of the semiconductor industry requires a dynamic solution. The diversity of CALORPLAST heat exchangers allow them to be used in strong acids and etching chemical (immersion tube/plate style) applications, but also extractable levels, far below many common plastic and metallic heat exchanger solutions allowing it to be used in ultra-pure water applications.

Other Applications

Sea water for marine use and aquatic life-support systems, cleaning and purifying bio-gas and CO2 extraction.

For help with your specific applications, support is always available from Specialty Plastics, Inc.

GF CALORPLAST® Standard Heat Exchangers

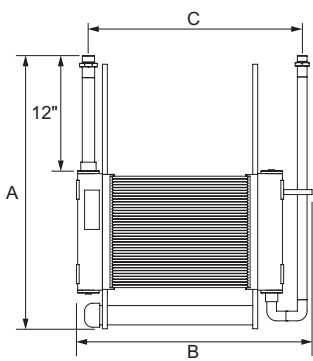
Custom sizes also available. For inquiries, please call 856-988-5876 or contact us today: sales@specialty-plastics.com.

Online Sizing Calculator available at www.gfpiping.com/online-htcalc.

NOTE: Dimensions are for reference; actual dimensions may vary (±1 inch)

PVDF (Polyvinylidene fluoride) for Steam Service (B)

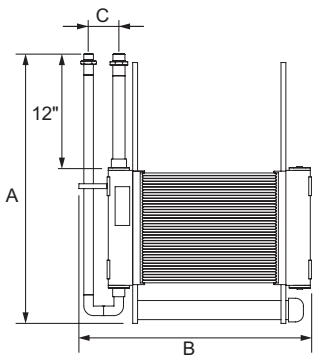
Style 1, Horizontally Mounted



Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
8.8	530-3r	150 101 735	28	24	21.7	1	3/4
15	530-5r	150 101 736	28	24	21.7	1	3/4
23	730-5r	150 101 737	28	32	29.6	1	3/4
30	930-5r	150 101 738	28	40	37.5	1	3/4
30	530-5r	150 101 739	40	24	21.7	1	3/4
38	1130-5r	150 101 740	28	48	45.4	1	3/4
45	1330-5r	150 101 741	28	56	53.2	1	3/4
45	730-5r	150 101 742	40	32	29.6	1	3/4
52	1530-5r	150 101 743	28	64	61.1	1	3/4
60	1730-5r	150 101 744	28	72	69.0	1 1/2	3/4
60	930-5r	150 101 745	40	40	37.5	1 1/2	3/4
75	1130-5r	150 101 746	40	48	45.4	1 1/2	3/4
90	1330-5r	150 101 747	40	56	53.2	1 1/2	3/4
105	1530-5r	150 101 748	40	64	61.1	1 1/2	3/4

PVDF (Polyvinylidene fluoride) for Steam Service (B)

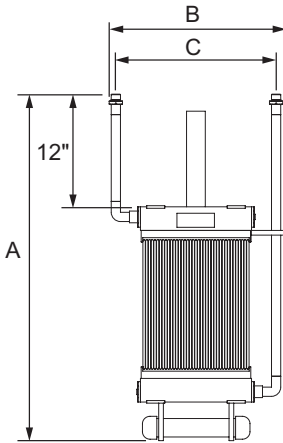
Style 2, Horizontally Mounted



Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
8.8	530-3r	150 101 750	28	24	3.1	1	3/4
15	530-5r	150 101 751	28	24	3.1	1	3/4
23	730-5r	150 101 752	28	32	3.1	1	3/4
30	930-5r	150 101 753	28	40	3.1	1	3/4
30	530-5r	150 101 754	40	24	3.1	1	3/4
38	1130-5r	150 101 755	28	48	3.1	1	3/4
45	1330-5r	150 101 756	28	56	3.1	1 1/2	3/4
45	730-5r	150 101 757	40	32	3.1	1 1/2	3/4
52	1530-5r	150 101 758	28	64	3.1	1 1/2	3/4
60	1730-5r	150 101 759	28	72	3.1	1 1/2	3/4
60	930-5r	150 101 760	40	40	3.1	1 1/2	3/4
75	1130-5r	150 101 761	40	48	3.1	1 1/2	3/4
90	1330-5r	150 101 762	40	56	3.1	1 1/2	3/4
105	1530-5r	150 101 763	40	64	3.1	1 1/2	3/4



PVDF (Polyvinylidene fluoride) for Steam Service (B)
 Style 3, Vertically Mounted



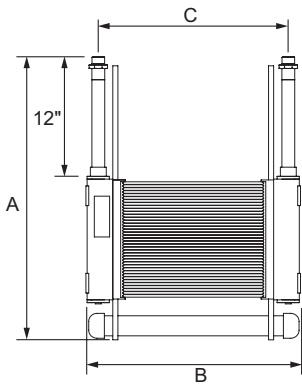
Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
8.8	530-3r	150 101 765	37	19	16.5	3/4	3/4
15	530-5r	150 101 766	37	19	16.5	3/4	3/4
23	730-5r	150 101 767	45	19	16.5	1	3/4
30	930-5r	150 101 768	53	19	16.5	1	3/4
30	530-5r	150 101 769	37	30	28.0	1	3/4
38	1130-5r	150 101 770	61	19	16.5	1	3/4
45	1330-5r	150 101 771	69	20	18.4	1½	3/4
45	730-5r	150 101 772	45	33	30.0	1½	3/4
52	1530-5r	150 101 773	77	20	18.4	1½	3/4
60	1730-5r	150 101 774	85	20	18.4	1½	3/4
60	930-5r	150 101 775	53	32	30.0	1½	3/4
75	1130-5r	150 101 776	61	32	30.0	1½	3/4
90	1330-5r	150 101 777	69	32	30.0	1½	3/4
105	1530-5r	150 101 778	77	32	30.0	1½	3/4
120	1730-5r	150 101 779	85	32	30.0	1½	3/4

Crate charge included
 Non-Cancelable/Non-Returnable



**PVDF (Polyvinylidene fluoride) for
 (Hot and Cold) Water Service**
 Style 1, Horizontally Mounted

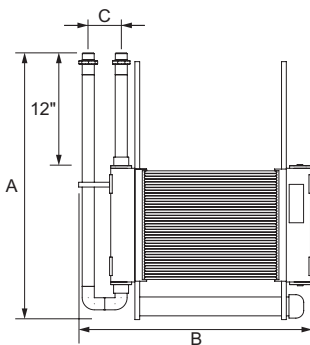
(B)



Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
8.8	530-3r	150 101 820	28	21	18.6	1	1
15	530-5r	150 101 821	28	21	18.6	1	1
23	730-5r	150 101 822	28	29	26.5	1	1
30	930-5r	150 101 823	28	37	34.4	1	1
30	530-5r	150 101 824	40	21	18.6	1	1
38	1130-5r	150 101 825	28	45	42.3	1	1
45	1330-5r	150 101 826	28	53	50.1	1	1
45	730-5r	150 101 827	40	29	26.5	1	1
45	530-5r	150 101 828	52	21	18.6	1	1
60	1730-5r	150 101 829	28	69	65.9	1½	1½
60	930-5r	150 101 830	40	37	34.4	1½	1½
68	730-5r	150 101 831	52	29	26.5	1½	1½
75	1130-5r	150 101 832	40	45	42.3	1½	1½
90	1330-5r	150 101 833	40	53	50.1	1½	1½
90	930-5r	150 101 834	52	37	34.4	1½	1½
113	1130-5r	150 101 835	52	45	42.3	1½	1½
120	1730-5r	150 101 836	40	69	65.9	1½	1½
135	1330-5r	150 101 837	52	53	50.1	1½	1½

**PVDF (Polyvinylidene fluoride) for
 (Hot and Cold) Water Service**
 Style 2, Horizontally Mounted

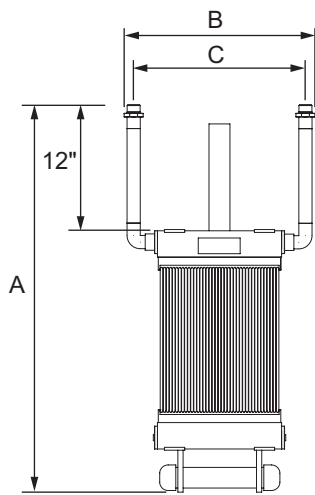
(B)



Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
8.8	530-3r	150 101 840	30	26	3.4	1	1
15	530-5r	150 101 841	30	26	3.4	1	1
23	730-5r	150 101 842	30	33	3.4	1	1
30	930-5r	150 101 843	30	41	3.4	1	1
30	530-5r	150 101 844	40	26	3.4	1	1
38	1130-5r	150 101 845	30	50	3.4	1	1
45	1330-5r	150 101 846	30	56	3.4	1	1
45	730-5r	150 101 847	40	33	4.4	1½	1½
45	530-5r	150 101 848	52	26	4.4	1½	1½
60	1730-5r	150 101 849	30	72	3.4	1	1
60	930-5r	150 101 850	40	41	4.4	1½	1½
68	730-5r	150 101 851	52	33	4.4	1½	1½
75	1130-5r	150 101 852	40	50	4.4	1½	1½
90	1330-5r	150 101 853	40	58	4.4	1½	1½
90	930-5r	150 101 854	52	41	4.4	1½	1½
113	1130-5r	150 101 855	52	50	4.4	1½	1½
120	1730-5r	150 101 856	40	74	4.4	1½	1½
135	1330-5r	150 101 857	52	58	4.4	1½	1½

**PVDF (Polyvinylidene fluoride) for
 (Hot and Cold) Water Service**
 Style 3, Vertically Mounted

(B)

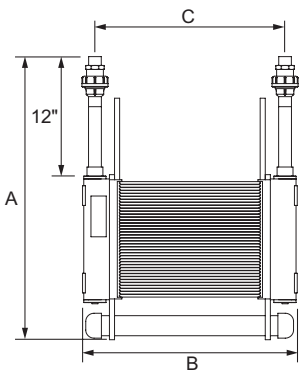


Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
8.8	530-3r	150 101 860	37	19	16.4	1	1
15	530-5r	150 101 861	37	19	16.4	1	1
23	730-5r	150 101 862	45	19	16.4	1	1
30	930-5r	150 101 863	53	19	16.4	1	1
30	530-5r	150 101 864	37	30	28.0	1	1
38	1130-5r	150 101 865	61	19	16.4	1	1
45	1330-5r	150 101 866	69	19	16.4	1	1
45	730-5r	150 101 867	45	35	31.9	1½	1½
45	530-5r	150 101 868	37	46	43.5	1½	1½
60	1730-5r	150 101 869	85	19	16.4	1	1
60	930-5r	150 101 870	53	35	31.9	1½	1½
68	730-5r	150 101 871	45	47	43.5	1½	1½
75	1130-5r	150 101 872	61	35	31.9	1½	1½
90	1330-5r	150 101 873	69	35	31.9	1½	1½
90	930-5r	150 101 874	53	47	43.5	1½	1½
113	1130-5r	150 101 875	61	47	43.5	1½	1½
120	1730-5r	150 101 876	85	35	31.9	1½	1½
135	1330-5r	150 101 877	69	47	43.5	1½	1½
180	1730-5r	150 101 878	85	47	43.5	1½	1½

Crate charge included
 Non-Cancelable/Non-Returnable

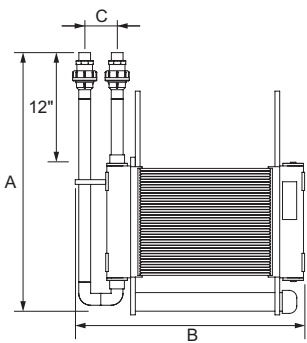


PE-RT (Polyethylene – Raised Temperature up to 176°F) for Hot and Cold Water Service (B)
 Style 1, Horizontally Mounted



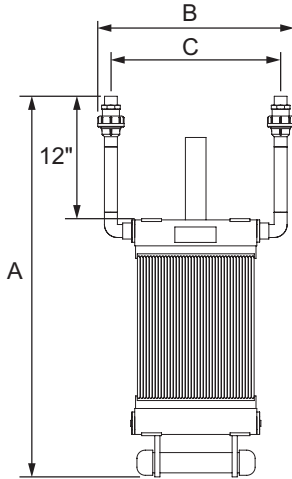
Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
15	530-5r	150 101 921	28	22	18.6	1	1
23	730-5r	150 101 922	28	29	26.5	1	1
30	930-5r	150 101 923	28	37	34.4	1	1
30	530-5r	150 101 924	40	23	18.6	1	1
38	1130-5r	150 101 925	28	46	42.3	1	1
45	1330-5r	150 101 926	28	54	50.1	1½	1½
45	730-5r	150 101 927	40	30	26.5	1½	1½
45	530-5r	150 101 928	52	23	18.6	1½	1½
60	1730-5r	150 101 929	28	70	65.9	1½	1½
60	930-5r	150 101 930	40	38	34.4	1½	1½
68	730-5r	150 101 931	52	30	26.5	1½	1½
75	1130-5r	150 101 932	40	46	42.3	1½	1½
90	1330-5r	150 101 933	40	54	50.1	1½	1½
90	930-5r	150 101 934	52	38	34.4	1½	1½
113	1130-5r	150 101 935	52	46	42.3	1½	1½
120	1730-5r	150 101 936	40	70	65.9	1½	1½
135	1330-5r	150 101 937	52	54	50.1	1½	1½

PE-RT (Polyethylene – Raised Temperature up to 176°F) for Hot and Cold Water Service (B)
 Style 2, Horizontally Mounted



Size [sq ft]	Modules	Part Number	A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
15	530-5r	150 101 941	28	25	3.4	1	1
23	730-5r	150 101 942	28	33	3.4	1	1
30	930-5r	150 101 943	28	41	3.4	1	1
30	530-5r	150 101 944	40	25	3.4	1	1
38	1130-5r	150 101 945	28	50	3.4	1	1
45	1330-5r	150 101 946	29	57	3.4	1	1
45	730-5r	150 101 947	41	33	4.4	1½	1½
45	530-5r	150 101 948	53	27	4.4	1½	1½
60	1730-5r	150 101 949	29	57	3.4	1	1
60	930-5r	150 101 950	41	41	4.4	1½	1½
68	730-5r	150 101 951	53	33	4.4	1½	1½
75	1130-5r	150 101 952	41	50	4.4	1½	1½
90	1330-5r	150 101 953	41	58	4.4	1½	1½
90	930-5r	150 101 954	53	41	4.4	1½	1½
113	1130-5r	150 101 955	53	50	4.4	1½	1½
120	1730-5r	150 101 956	41	74	4.4	1½	1½
135	1330-5r	150 101 957	53	58	4.4	1½	1½

PE-RT (Polyethylene – Raised Temperature up to 176°F) for Hot and Cold Water Service (B)
 Style 3, Vertically Mounted



Size [sq ft]	Modules	Part Number		A [in]	B [in]	C [in]	Inlet [MPT]	Outlet [MPT]
15	530-5r	150 101 960		37	19	16.4	1	1
23	730-5r	150 101 962		45	19	16.4	1	1
30	930-5r	150 101 963		53	19	16.4	1	1
30	530-5r	150 101 964		37	31	28.0	1	1
38	1130-5r	150 101 965		61	19	16.4	1	1
45	1330-5r	150 101 966		69	19	16.4	1	1
45	730-5r	150 101 967		45	31	28.0	1½	1½
45	530-5r	150 101 968		37	47	43.5	1½	1½
60	1730-5r	150 101 969		85	19	16.4	1	1
60	930-5r	150 101 970		53	31	28.0	1½	1½
68	730-5r	150 101 971		45	47	43.5	1½	1½
75	1130-5r	150 101 972		61	36	31.9	1½	1½
90	1330-5r	150 101 973		69	36	31.9	1½	1½
90	930-5r	150 101 974		53	47	43.5	1½	1½
113	1130-5r	150 101 975		61	47	43.5	1½	1½
120	1730-5r	150 101 976		85	36	31.9	1½	1½
135	1330-5r	150 101 977		69	47	43.5	1½	1½
180	1730-5r	150 101 978		85	47	43.5	1½	1½

Crate charge included
 Non-Cancelable/Non-Returnable