





Installation & Service Manual



TNG

GLASS FRONT SELF-SERVE CHEESE/DELI MERCHANDISERS
Medium Temperature Refrigerated Display Cases

This manual has been designed to be used in conjunction with the General (UL/NSF) Installation & Service Manual.

Save the Instructions in Both Manuals for Future Reference!!

This merchandiser conforms to the American National Standard Institute & NSF International Health and Sanitation standard ANSI/NSF 7 - 2003.

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The following Medium Temperature Cheese and Deli Merchandiser models are covered in this manual:

MODELS DESCRIPTION

TNG 4', 6', 8' & 12' GLASS FRONT, SELF-SERVE CHEESE/DELI

MERCHANDISERS



SPECIFICATIONS

TNG Glass Front Self-Serve Cheese/Deli Merchandisers

Refrigeration Data:

			CAPACITY (BTUH / FT)		CAPACITY (BTUH / FT)				DISCHARG	E AIR	AVG. REF.
MODEL	CASE LENGTH	CASE USAGE	PARALLEL	CONVENTIONAL	EVAPORATOR (°F)	UNIT SIZING (°F)	TEMPERATURE (°F)	VELOCITY (FPM)	CHARGE (LBS/FT)		
TNG	4'/6'/8'/12'	MED TEMP CHEESE	470*	532*	+20**	+18	+28	475***	0.25		
TNG	4'/6'/8'/12'	MED TEMP DELI	579*	656*	+15**	+13	+25	475***	0.25		

^{*} For sizing all refrigeration equipment other than TYLER, use conventional BTUH values.

FOR SPECIFIC COMPRESSOR SIZING INFORMATION, REFER TO TYLER APPLICATIONS FOR RACK SYSTEM COMPRESSORS AND/OR THE COMPRESSOR MANUFACTURERS FOR SINGLE COMPRESSORS. FOR LINE SIZING INFORMATION, REFER TO THE MISCELLANEOUS SECTION "BUFF" IN THE TYLER SPECIFICATION GUIDE.

Electrical Data:

Fans and Heaters (120 Volt)

·	CASE	FANS/		TAL RD FANS		TAL FANS	ANTI-S	RGE AIR SWEAT (0V)
MODEL	LENGTH	CASE	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
TNG	4'	1	0.34	30.2	0.22	11.0	N/A	N/A
TNG	6'	2	0.68	60.4	0.44	22.0	N/A	N/A
TNG	8'	2	0.68	60.4	0.44	22.0	N/A	N/A
TNG	12'	3	1.02	90.6	0.66	33.0	N/A	N/A

Defrost Data

				EPR SE	TTINGS *	BACKUP PI CONTROL S		DEFROST
DEFROST TYPE*	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION (°F)	R-22 (PSIG)	R-404A (PSIG)	CUT-IN (PSIG @ R-22)	CUT-OUT (PSIG @ R-22)	WATER (LB/FT/DAY)
TIME OFF - CHEESE	6	28		43	56	45	35	4.25
TIME OFF - DELI	6	28		38	50	40	30	4.25

Set EPR to give this pressure at the case.

TEMPERATURE CONTROL can be achieved by a thermostat, suitably sized EPR, or Low Pressure Control. The Discharge Air Thermostat should be set @ 28°F CUT IN with a 21°F CUT-OUT; EPR set at 43# (R-22); and Low Pressure Control settings to be used for backup control only (see table).

CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING (R-22 REFRIGERANT)												
MODEL 4' 6' 8' 12' 16' 20' 24' 28' 32' 36' 40' 44'								44'				
TNG - CHEESE	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"
TNG - DELI	1/2"	1/2"	1/2"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1-1/8"

UL SANITATION approved in accordance with ANSI/NSF - 7.

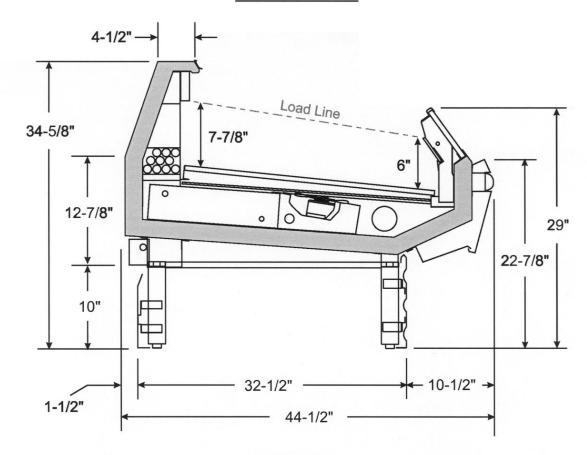
CASE BTUH REQUIREMENTS are calculated to produce approximately the indicated entering-air temperature with absolute maximum operating ambient limits of 75°F & 55RH.

The information contained herein is based on technical data and tests that we believe are reliable, and is intended for use by persons having technical skill at their own discretion and risk. Since conditions of use are outside of Tyler's control, we cannot assume any liability for results obtained or damages incurred through the applications of the data presented. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

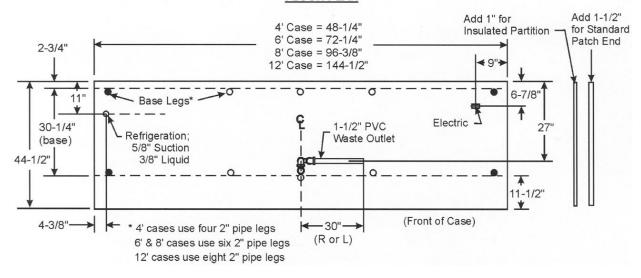
^{**} Evaporator temperature is based on the saturated pressure leaving the case.

^{***} Air velocity measured 1 hour after defrost termination at the top of the discharge air grid using an ALNOR JR. velometer with a scoop.

TNG CROSS SECTION



FLOOR PLAN

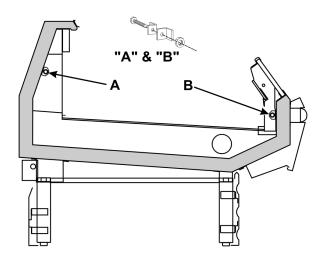




INSTALLATION PROCEDURES

Carpentry Procedures

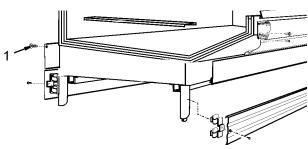
Case Pull-Up Locations



The TNG models have two pull-ups at each end of the case. Pull-ups A and B are located as shown and should be installed and tightened starting with A and finishing with B.

See "General-UL/NSF I&S Manual" for line-up assembly instructions.

Raceway Cover & Rear Base Close-off Installation



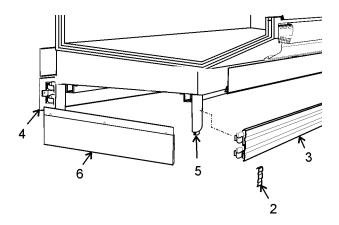
Position raceway cover (1) over rear raceway opening and secure with screws in every hole.

Rear Base and End Close-off Installation

Kickplate, optional rear base and end closeoffs have spring clips on their back sides that secure to the pipe legs.

NOTE

Optional rear base close-offs do not require joint trim.



- Before installing kickplates on a multiple case lineup, snap a joint trim (2) over the top and bottom of one end of each kickplate (3).
- 2. Lineup each kickplate (3) and/or optional rear base close-off (4) and push to secure the spring clips to the legs (5).
- 3. Slide joint trims (2) over the case-to-case joints.
- 4. Position end close-offs (6) over the end of the kickplate (3) and/or optional rear base close-off (4) and push until the spring clips secure to the legs (5).

Trim & NSF Thermometer Installation

The joint trim and mounting hardware are shipped loose. Trim includes rear top joint trim, card molding joint trim, rear duct joint trim, glass joint trim, color band joint trim, upper front cladding joint trim, lower front cladding joint trim, kickplate joint trim and horizontal end trim.

Horizontal end trim covers gaps between the cases. The trim is glued onto the shipping cardboard. Apply trim with notch side towards front of case, after running beads of caulking on the edges of the cases. Sheet metal screws can be used for additional securing.

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Patch end trim is shipped factory installed. If field installation is required, be sure the patch end is pulled up enough to fit snuggly against the sealing tubing on the inside of the case. The patch end must seal tightly against the lift glass wiper to ensure proper operating temperatures.

The NSF case thermometer and bracket assembly is shipped loose with the case.

After removing the thermometer and bracket assembly from the shipping packaging, position bracket over left horizontal joint trim and case-to-case joint where the joint trim is notched out. Make sure the bracket is positioned to the front of the case, flush with the top and left inside edge of the bottom case end welds. Secure thermometer bracket to with two screws in the pre-drilled holes.

Electrical Procedures

Electrical Considerations

CAUTION

Make sure all electrical connections at components and terminal blocks are tight. This will prevent burning of electrical terminals and/or premature component failure.

NOTE

The raceway houses the electrical wiring and components for the case. Since the lower front cladding is shipped loose, the raceway has immediate access.

Case Fan Circuit

This circuit is to be supplied by an uninterrupted, protected 120V circuit. The case fan circuit is not cycled during defrost on any of these models.

Defrost Information

See "General-UL/NSF I&S Manual" for operational descriptions for Off Time defrost control.

Defrost Control Chart

		Defrost	
Defrost	Defrosts	Duration	Term.
<u>Type</u>	Per Day	<u>(Min)</u>	Temp.
Off Time	6	28	

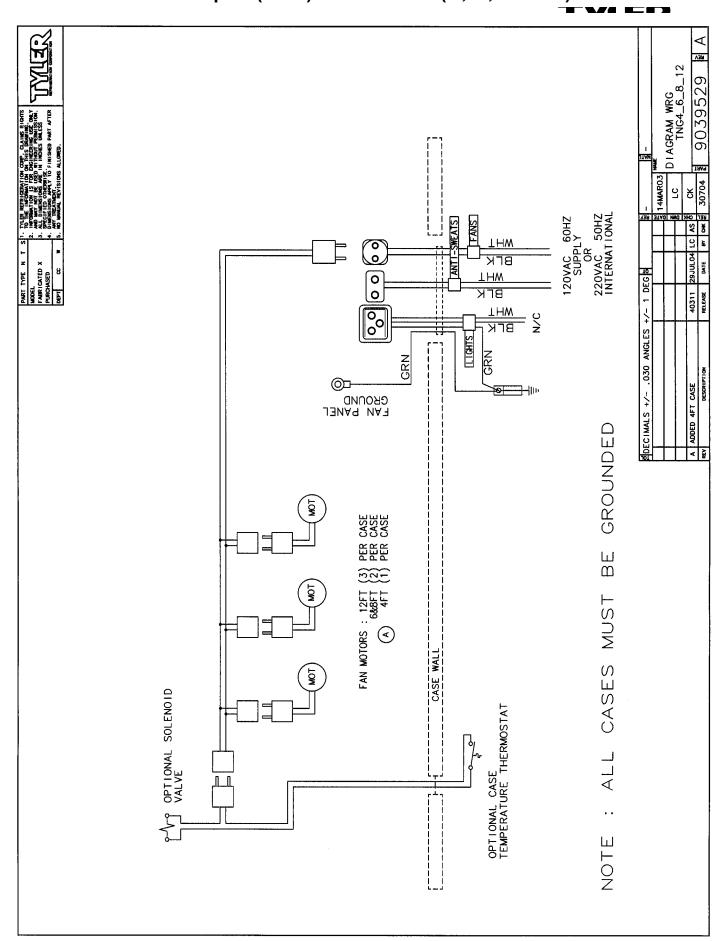
WIRING DIAGRAMS

ELECTRICIAN NOTE - OVERCURRENT PROTECTION

120V circuits should be protected by 15 or 20 Amp devices per the requirements noted on the cabinet nameplate or the National Electrical Code, Canadian Electrical Code - Part 1, Section 28. 208V defrost circuits employ No. 12 AWG field wire leads for field connections. On remote cases intended for end to end line-ups, bonding for ground may rely upon the pull-up bolts.

The following wiring diagram on page 8 covers all the TNG case electrical circuits.

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CLEANING AND SANITATION

Component Removal and Installation Instructions for Cleaning

Lower Trays and Screens

- 1. Open the front curved glass by lifting the handle at the bottom.
- 2. Remove product from the case interior.
- 3. Grasp and lift out each lower tray or screen from the bottom of the case.
- 4. After cleaning, replace in reverse order.

Front Air Ducts

- 1. Remove lower trays or screens, see this page.
- 2. Lift out front air duct sections.
- 3. After cleaning, replace in reverse order.

Rear Air Ducts

- 1. Remove lower trays or screens, see this page.
- 2. Remove mounting screws from rear air duct.
- 3. Lift out rear air duct sections.
- 4. After cleaning, replace in reverse order.

Front Lower Cladding

- 1. Remove front kickplate.
- Push up and forward on front lower cladding to release lower edge from rear support tabs. After rear tabs are clear, pull down on cladding to clear upper tabs from slots in bottom of upper front cladding and remove cladding from case.
- 3. After cleaning, replace front lower cladding by positioning front edge behind the upper cladding. After front edge is behind the upper cladding, insert bottom edge in rear support tabs. Lower front of cladding until it rest on bottom edge of upper cladding. Make sure front and rear edge are completely supported. Replace front kickplate.

Front Upper Cladding

- Remove color band, bumper and bumper retainer from the case. See page 12 of in manual.
- 2. Remove front kickplate and front lower cladding. See this page.
- 3. Remove screws and front upper cladding from the case.
- 4. After cleaning, replace front upper cladding and remaining front components in the reverse order.

Cleaning Instructions

WARNING

TYLER Refrigeration does not recommend the use of high pressure cleaning equipment on service style cases!! The sealing of front glass and end joints is critical in these cases and high pressure cleaners can penetrate and/or damage these seals. Damaged seals allow water leaks and/or air leaks that can cause poor case refrigeration.

CAUTION

- When cleaning this case, try not to introduce water into the case faster than it can be carried away by the waste outlet.
- Liquid chlorine bleach is corrosive to metals. The use of bleach or products containing bleach will damage metal surfaces and void the case warranty.
- Sanitize the case with Quaternary Ammonium Solutions (ex: KAYQUAT II, J-512 Sanitizer, SANIQUAT 512, etc...) approved per 21CFR 178.1010, followed by adequate draining and air drying. These solutions may be obtained from Kay Chemical Co., Johnson Wax Professional, Coastwide Laboratories, etc....
- Always use a soft cloth or sponge with mild detergent and water to clean the front glass. Never use abrasives or scouring pads to clean glass. They can scratch and/or damage the glass.

See "General (UL/NSF) I&S Manual" for case cleaning instructions.



Stainless Steel Cleaning Methods

The cleaning data in the following stainless steel cleaning chart was supplied by AISI. The information was supplied by Prime Metals Division, Alumax Aluminum Corporation.

TYPE OF CLEANING	CLEANING AGENT*	APPLICATION METHOD**	EFFECT ON FINISH
Routine cleaning	Soap, ammonia or detergent and water.	Sponge with cloth, then rinse with clear water and wipe dry.	Satisfactory for use on all finishes.
Smears and finger- prints	Arcal 20, Lac-O-Nu, Lumin Wash O'Cedar Cream Polish, Stainless Shine	Rub with cloth as directed on the package.	Satisfactory for use on all finishes. Provides barrier film
Stubborn spots and stains, baked-on splatter, and other light	Allchem Concentrated Cleaner	Apply with damp sponge or cloth.	Satisfactory for use on all finishes.
discolorations	Samae, Twinkle, or Cameo Copper Cleaner	Rub with damp cloth.	Satisfactory for use on all finishes if rubbing is light.
	Grade FFF Italian pumice, whiting or talc	Rub with damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Liquid NuSteel	Rub with dry cloth. Use a small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Paste NuSteel or DuBois Temp	Rub with dry cloth. Use a small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Cooper's Stainless Steel Cleaner, Revere Stainless Steel Cleaner	Apply with damp sponge or. cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Grade F Italian pumice, Steel Bright, Lumin Cleaner, Zud or Restoro	Rub with a damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Penny-Brite or Copper-Brite	Rub with a dry cloth. Use a small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
Heat tint or heavy discoloration	Penny-Brite or Copper-Brite	Rub with a dry cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Paste NuSteel or DuBois Temp	Rub with dry cloth. Use a small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Revere Stainless Steel Cleaner	Apply with a damp sponge or cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.
	Allen Polish, Steel Bright, Wyandotte, Bab-O or Zud	Rub with a damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and No. 7 and 8 (polished) finishes.

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TYPE OF CLEANING	CLEANING AGENT*	APPLICATION METHOD**	EFFECT ON FINISH
Burnt-on foods and grease, fatty acids, milkstone (where swabbing or rubbing is not practical)	Easy-Off, De-Grease-It, 4-6% hot solution of such agents as trisodium tripolyphospate, or 5-15% caustic soda solution	Apply generous coating. Allow to stand for 10-15 min. Repeated application may be necessary.	Excellent removal, satisfactory for use on all finishes.
Tenacious deposits, rusty discolorations, industrial atmospheric stains	Oakite No. 33, Dilac, Texo 12, Texo N.Y., Flash-Klenz, Caddy Cleaner, Turco Scale 4368 or Permag 57.	Swab and soak with clean cloth. Let stand 15 minutes or more according to directions on package. Rinse and dry.	Satisfactory for use on all finishes.
Hard water spots and scale	Vinegar	Swab or wipe with a cloth. Rinse with water and dry.	Satisfactory for use on all finishes.
	5% oxalic acid, 5% sulamic acid, 5-10% phospheric acid, or Dilac, Oakite No. 33, Texo 12 or Texo N.Y.	Swab or soak with a cloth. Let stand 10-15 minutes. Always follow with neutralizer rinse, and dry.	Satisfactory for use on all finshes. Effective on tenacious deposites or where scale has built up.
Grease and oil	Organic solvents such as carbon tetrachloride, tri- chlorethylene, acetone, kero- sene, gasoline, benzene, alcohol and chlorethane n.u.	Rub with a cloth. Organic solvents may be flammable and/or toxic. Observe all precautions against fire. Do not smoke while vapors are present. Be sure area is well ventilated.	Satisfactory for use on all finishes.

Use of proprietary names is intended only to indicate a type of cleaner, and does not constitute an endorsement, nor is omission of any proprietary cleanser to imply its inadequacy. It should be emphasized that all products should be used in strict accordance with instructions on package.

SERVICE INSTRUCTIONS

See "General-UL/NSF I&S Manual" for fan blade & motor and color band & bumper replacement instructions.

Connecting the Refrigeration Piping and Components

WARNING

Be sure to position a flame and heatresistent shield over the bottom of the case liner. Heat from brazing could damage the liner and/or cause personal injury or death from fire.

- 1. Remove screws and refrigeration piping cover from the left bottom of the case.
- 2. Position loose refrigeration piping and/or optional valves between the open lines in the bottom and upright of the case.

NOTE

- Make sure all sensor and thermostat wires are clear of areas being heated.
- Mount all refrigeration lines off the floor to allow for cleaning access.
- Apply flux to all joint ends. Starting at one end, thoroughly heat each new pipe joint and braze it together. Repeat this process until all new pipe joints have been brazed.
- 4. After piping has cooled, route and connect thermostat and sensor wires through openings in the bottom of the case.

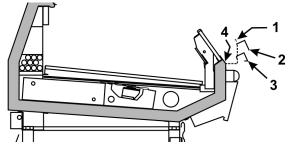
^{**} In all applications a sponge or fibrous brush or pad are recommended. DO NOT use ordinary steel wool, steel brushes, chlorine bleach or products containing bleach for cleaning or sanitizing stainless steel.



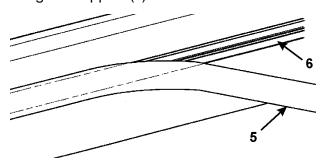
Color Band, Bumper and Bumper Retainer Replacement

NOTE

Color band, bumper and bumper retainer must be removed to access the screws for the front upper cladding.



 Remove screws (1), color band joint trim
 (2) and color band (3) from front bottom glass support (4).

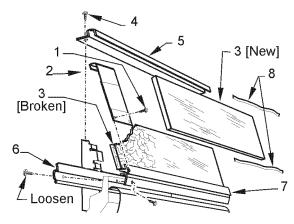


- 2. Starting at one of the bumper joints, pry edge of bumper (5) until it starts to release from the bumper retainer (6).
- 3. Grasp the loose end of the bumper (5) and pull firmly to peel bumper (5) off the bumper retainer (6).
- 4. Use old bumper as a guide, cut new bumper slightly longer (approx. 1/8") than the old bumper.

NOTE

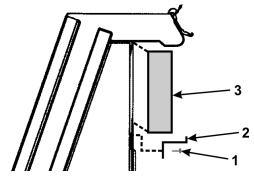
- Bumpers will shrink when the cases are at operating temperature.
- Bumper unevenness may be remedied by striking with a mallet and straight borad along the length of the installation
- 5. Starting at one end, snap the new bumper (5) onto the bumper retainer (6).
- 6. Install color band (3) color band joint trim (2) and secure to front bottom glass support (4) with screws (1).

Front Glass Replacement



- 1. Remove screw (1) and glass joint trim (2) from both joints of the broken glass (3).
- 2. Remove screws (4) and glass trim rail (5) from top of glass (3).
- Loosen rear retainer (6) and remove broken glass (3) from glass retainer assembly (7).
- 4. Apply sealant tape (8) to top and bottom edge of new glass (3).
- 5. Position new glass (3) in glass retainer assembly (7) and secure by tightening rear retainer (6).
- 6. Install glass trim rail (5) with screws (4) over top edge of new glass (3).
- 7. Install glass joint trim (2) with screw (1) over the joint areas of glass (3).

Discharge Grid Replacement



- 1. Remove screws (1) lower grid retainer (2) and discharge grid (3).
- 2. Replace discharge grid (3) and lower grid retainer (2) and secure with screws (1).

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PARTS INFORMATION

Operational Parts List

Case Usage		Domestic		
Electrical Circuit	11	5 Volt 60 He	rtz	
Case Size	4'	6'	8'	12'
Fan Motor	5125532 5 Watt	5125532 5 Watt	5125532 5 Watt	5125532 5 Watt
Fan Motor Brackets	5962269	5962269	5962269	5962269
Fan Bracket Plate	9041077	9041077	9041077	9041077
Fan Blades (7" 25° 5B)	5236974	5236974	5236974	5236974
Opt. ECM Fan Motor	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt
Opt. ECM Fan Motor Brackets	9025005	9025005	9025005	9025005
Opt. ECM Fan Blades (7" 20° 5B)	5960943	95960943	5960943	5960943
NSF Product Thermometer	5967100	5967100	5967100	5967100

For information on operational parts not listed above contact the TYLER Service Parts Department.



Cladding and Optional Trim Parts List

Item	Description	4'	6'	8'	12'
1	Rear Top Trim, SST	9810478	9809511	9807862	9809467
	Rear Top Joint Trim, SST				
2	Card Molding	9023029	5236879	5236930	5236927
	Card Molding Joint Trim	5941919	5941919	5941919	5941919
3	Honeycomb Grid	5208576	5216668	5208576 (2)	5208576 (3)
4	Grid Retainer, SST	9807867	9809515	9807867 (2)	9807867 (3)
5	Rear Duct, Ptd.	9810479	9809520	9807864	9809478
6	Glass Joint Trim (not shown)	9034801	9034801	9034801	9034801
7	Color Band, Ptd.	9808710	9809491	9804280	9804284
	Color Band Joint Trim, Ptd.	9801776	9801776	9801776	9801776
8	Bumper, 2"	9808710	9801609	9801303	9801609(2)
	Bumper Retainer	9808709	9802219	9801302	9809469
9	Upper Front Cladding, Ptd.	9808705	9802215	9800726	9801607
	Upr. Frt. Clad. Joint Trim, Ptd.	9801780	9801780	9801780	9801780
10	Kickplate Assembly, Ptd.	9808792	9024937	9024938	9024939
	Kickplate Joint Trim, Ptd.	9801770	9801770	9801770	9801770
11	Front Cladding Retainer	9808700	9802214	9800731	9801611
12	Lower Front Cladding, Ptd.	9808746	9809495	9804288	9804292
	Lwr. Frt. Clad. Joint Trim, Ptd.	9801784	9801784	9801784	9801784
13	Horizontal End Trim	9037279	9037279	9037279	9037279
14	Opt. Rear Base Close-off, Ptd.	9039106	9024934	9024935	9024936
15	Raceway Cover, Ptd	9801263	9802224	9801263 (2)	9801263 (3)
16	Rear Cladding, Ptd.	9810485	9809506	9807857	9809474
17	RH Base End Close-off, Ptd. (per patch end) (not shown)	9024986	9024986	9024986	9024986
	LH Base End Close-off, Ptd (per patch end) (not shown)	9043066	9043066	9043066	9043066

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