

Product Manual
Gravity Roller Conveyor
Application Guidelines, Specifications,
Installation Procedures, Maintenance, and
Parts Identification



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Read these documents thoroughly before attempting to perform maintenance or repairs to the applicable Intelligrated conveyor system components or devices. Exercise extreme caution when working around moving and rotating conveyor equipment. Wear the proper clothing and safety equipment. DO NOT attempt to perform any maintenance until the equipment is de-energized, locked out and tagged out in accordance with established company procedures.

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Package Conveyors



 <p>Do Not Climb, Sit, Stand, Walk, Ride, or Touch the Conveyor at Any Time</p>	 <p>Do Not Perform Maintenance on Conveyor Until Electrical, Air, Hydraulic and Gravity Energy Sources Have Been Locked Out or Blocked</p>	 <p>Operate Equipment Only With All Approved Covers and Guards in Place</p>
 <p>Do Not Load a Stopped Conveyor or Overload a Running Conveyor</p>	 <p>Ensure That All Personnel Are Clear of Equipment Before Starting</p>	 <p>Allow Only Authorized Personnel To Operate or Maintain Material Handling Equipment</p>
 <p>Do Not Modify or Misuse Conveyor Controls</p>	 <p>Keep Clothing, BodyParts, and Hair Away from Conveyors</p>	 <p>Remove Trash, Paperwork, and Other Debris Only When Power is Locked Out and Tagged Out</p>
 <p>Ensure That ALL Controls and Pull Cords are Visible and Accessible</p>	 <p>Know the Location and Function of All Stop and Start Controls</p>	 <p>Report All Unsafe Conditions Jams should be cleared ONLY BY Authorized, Trained, Personnel</p>

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SECTION A: PRODUCT SUMMARY

Table A-1 Product Summary for the Gravity Roller Conveyor

Components	Roller Conveyor Type		
	Light-Duty	Medium-Duty	
	No. G138	No. G196	No. G254
Standard Specifications			
Widths - "W"	10", 16", & 22"	16", 22", 28", 34", & 40"	16", 22", 28", 34", & 40"
Roller	No. G138KP	G196G1	No. G254HS
Channel Rail (Steel)	2-1/2" x 1-1/16" x #12 ga.	3-1/2" x 1-1/4" x #10 ga.	3-1/2" x 1-1/4" x #10 ga.
Finish	Powder-Coat Gray	Powder-Coat Gray	Powder-Coat Gray
Straight Sections			
Lengths	10'-0" & 5'-0"	10'-0" & 5'-0"	
Roller Centers	1.5", 3", & 4.5"	3", 4", 4.5", & 6"	
Coupler	Quick-Ezz; Hook & Rod	Splice Flat	
Curve Sections - 26IR			
Arcs	30°, 45°, 60°, & 90°	30°, 45°, 60°, & 90°	30°, 45°, 60°, & 90°
Ctrs. @ IR	1-1/2"	2-5/8"	2-5/8"
Curve Sections - TTF			
Arcs			30°, 45°, 60°, & 90°
Ctrs. @ IR			2-5/8"
Junctions - Straight (30° & 45°)			
Length	5'-0" = 10", 16", & 22" W	5'-0" = 10", 22" & 28" W 7'-6" = 34" & 40" W	
Roller Centers	1-1/2" & 3"	3"	
Junctions - Curve (90°)			
Curve Frame			TTF
Ctrs. @ IR			2-5/8"
Vertical Gates			
Length	3'-0", 3'-6" & 4'-0"	3'-0", 3'-6" & 4'-0"	
Lift Assistance	Gas Spring	Gas Spring	
Roller Centers	1-1/2" & 3"	3"	
Channel Rail (Aluminum)	2-1/2" x 1" x 12 ga.	3-1/2" x 1-1/4" x 1/8"	
Crossmembers	Welded Angle	Welded Angle	
Connection	2-1/2"	3-1/2", 6-5/8", & 10"	
Finish	Safety Yellow Paint	Safety Yellow Paint	
Ball Caster Modules			
Pattern	Square & Staggered	Square & Staggered	
Roller Centers	3" & 4-1/2"	3" & 4"	

SECTION B: APPLICATION GUIDELINES

Introduction

Gravity roller conveyors provide the simplest and most economical means of moving product. They consist of a series of full-width rollers supported by frame rails, and are available in portable and permanently installed models.

Portable gravity roller conveyors (light duty) are light enough to be easily dismantled and moved from one location to another.

Permanently installed gravity roller conveyors (light-duty or medium duty) can be used alone or interfaced with other types of conveyor equipment.

Gravity roller conveyors can be installed either pitched or level.

Pitched conveyors rely on the natural force of gravity and product weight to move product. Examples of pitched conveyors are found in storage (accumulation) lines and the loading and unloading of trucks. Level conveyors, on the other hand, rely on manual push. These “push lines” are typically found in product sorting and staging operations.

Gravity roller conveyors are ideal for applications where low initial investment, minimal maintenance, and design simplicity are critical.

Developing Roller Conveyor Specifications

STEP 1 Load Characteristics

Analyze the size, weight and conveying surface of the conveyed items:

- A flat, smooth, and firm surface must contact the rollers.
- Place small items in a conveyable tote.
- Determine the “live load.”

STEP 2 Operating Conditions

1. Determine the method of loading and unloading.
2. For high-impact loading, use No. G196K_ rollers.
3. Identify the operating environment (clean/dusty; dry/humid; hot/cold):
 - For a clean and dry environment, use plain bearings.
 - For a high heat environment, use plain bearings.
 - For a high humidity environment, use No. G196KG rollers.

STEP 3 Frame Capacity

All frame capacities listed below assume evenly distributed loading. Deduct the weight of the section before determining “section” capacity.

LD (light-duty) frame (2-1/2” deep x 12 ga.):

- 10’ sections with supports @ 10’-0” ctrs. - 350 lbs./ft.
- 5’/10’ sections with supports @ 5’-0” ctrs. - 520 lbs./ft.
- 5’/10’ sections fully-supported, limited by no. of rollers/capacity.

MD (medium-duty) frame (3-1/2” deep x 10 ga.):

- 10’ sections with supports @ 10’-0” ctrs. - 110 lbs./ft.
- 5’/10’ sections with supports @ 5’-0” ctrs. - 1400 lbs./ft.
- 5’/10’ sections fully supported, limited by no. of rollers/capacity.

STEP 4 Roller Centers

For a product (with a flat, smooth, and firm bottom surface) to convey satisfactorily, the shortest load must have at least three rollers under it at all times.

STEP 5 Roller Selection

Select the appropriate roller based on the conveyor's operating conditions:

- No. G138KP galvanized tube, open type, non-greased bearings; used for portable clean and dry applications.
- No. G196KP galvanized tube, open type, non-greased bearings; used for clean and dry applications
- No. G196KG galvanized tube, open type, greased bearings; used for clean and dry applications

STEP 6 Roller Capacity

Divide the weight of the heaviest product by the number of supporting rollers. The roller capacity will usually exceed the capacity of the frame. These are the roller types and their capacities:

- No. G138 - 90# cap.
- No. G196 - 260# cap.

STEP 7 Conveyor Width

Determine the conveyor width in terms of "W" (distance between frame rails). The maximum product width must not exceed "W" x 1.25; order straight sections and curve sections of the same "W." If the product width does not exceed conveyor width ("W"), refer to Table D.1 Curve Selection Formula; order straight sections and curve sections of the same "W."

STEP 8 Conveyor Pitch

The grades listed in Table B.1 are approximate for average conditions, and should be used for layout purposes. The grade requirements may vary with the spacing of the rollers.

Table B - 1 Conveyor Pitch

Item	Approximate Weight	Approximate Inches of Drop / Ft.		
		Roller		
		No. G138KP	No. G196G1	No. G196KG
Cartons	1 to 5 lbs.	3/4"	7/8"	
	5 to 15 lbs.	5/8"	3/4"	
	15 to 50 lbs.	1/2"	5/8"	1"
	50 to 150 lbs.		1/2"	3/4"
Tote Pans	1 to 5 lbs.	1/2"	5/8"	
	5 to 15 lbs.	3/8"	1/2"	3/4"
	15 to 50 lbs.	5/16"	7/16"	5/8"
	50 to 150 lbs.		3/8"	1/2"
	150 to 500 lbs		5/16"	7/16"

The push required to move a load on a level conveyor is approximately 3% of its weight. For pushing heavy loads, a pitch of approximately 1/8" per foot is recommended, reducing the push required, but not enough to carry the load by gravity alone. For 90° curves with 2'-6" inside radius, the drop required is approximately the same as that required for a 10' straight section.

SECTION C: SPECIFICATIONS

Light Duty Straight Section

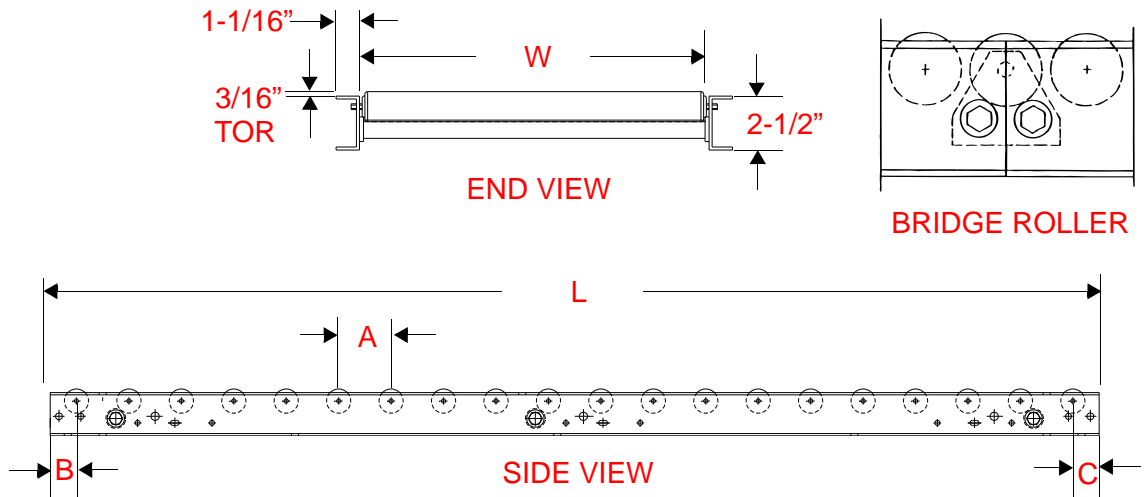


Figure C - 1 Light Duty Roller Conveyor - Straight Section

DESIGNATION	GRS.
STYLE	01I.
LENGTHS	5'-0" and 10'-0".
WIDTHS	10", 16" 22, W.
ROLLER	No. G138KP.
ROLLER CENTERS	1-1/2" 3", & 4-1/2".
ROLLER END SPACING	See Figure C-1 and Table C-1.

Table C-1 Roller End Spacing

Roller Center ("A")	10'-0" Section		5'-0" Section	
	"B"	"C"	"B"	"C"
1-1/2"	1-1/2"	1-1/2'	1-1/2"	1-1/2"
3"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
4-1/2"	1-1/2"	1-1/2"	1-1/2"	4-1/2"

- BRIDGE ROLLER** Supplied for bridging gap at ends of two (2) adjoining sections (1-1/2" roller centers only).
- "TOR"** "Top Of Roller" is 3/16" above top flange of frame.
- FRAME RAIL** 2-1/2" deep x 1-1/16" x 12 ga. formed steel channel.
- CROSSMEMBER** Bolted type; .84" dia. with welded nut inserts.
Four (4) per 10'-0"; three (3) per 5'-0".
- STANDARD COUPLER** None
- OPTIONAL COUPLER** Quick-Eez (See Figure C.10).
Hook & Rod (see Figure C.10).
- CAPACITY** 350 lbs. (less section weight) distributed on 10' section supported at 10' centers.

Light Duty Curve Section

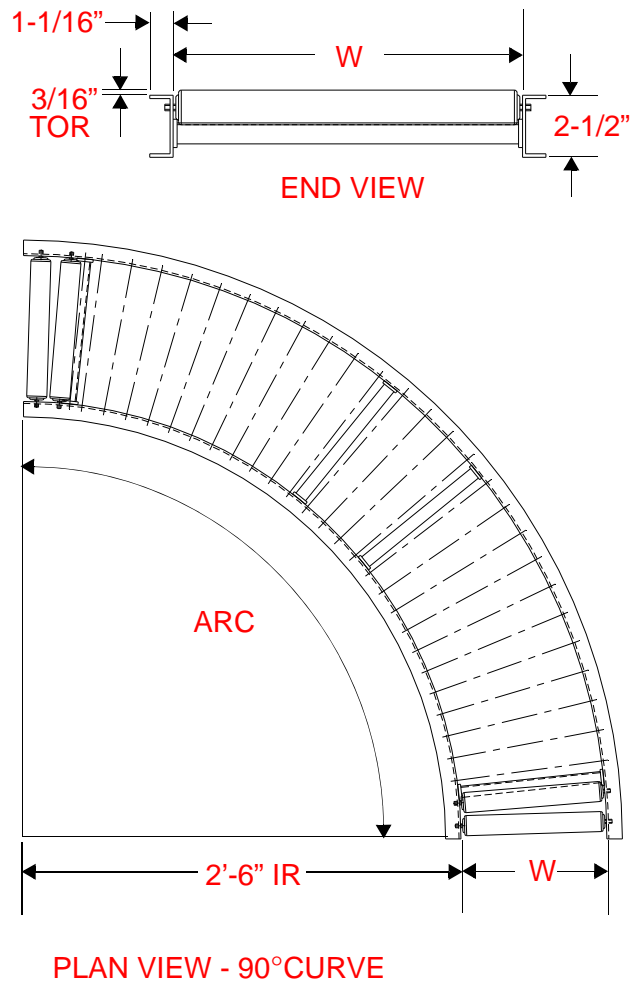


Figure C - 2 Light Duty Roller Conveyor - Curve Section

DESIGNATION	GRC
(STYLE) ARC	(05L) 90° - (06L) 60° - (07L) 45° - (08L) 30°.
WIDTHS	10", 16", 22" W.
ROLLER	No. G138KP.
ROLLER CENTERS	1-1/2" at inside rail.
"TOR"	"Top Of Roller" is 3/16" above top flange of frame.
FRAME RAIL	2-1/2" deep x 1" x 12 ga. formed steel channel.
FRAME TYPE/RADIUS	26IR - 2'-6" inside radius (IR) all widths).
CROSSMEMBER	Bolted type; .84" dia. with welded nut inserts. Four (4) per 90°; 3 per 60° and 45°; 2 per 30° .
STANDARD COUPLER	None.
OPTIONAL COUPLER	Quick-Ezz (see Figure C-10). Rods at both ends (see Figure C-10).
CAPACITY	Equal to or greater than straight section with same specifications.

Light Duty Junction

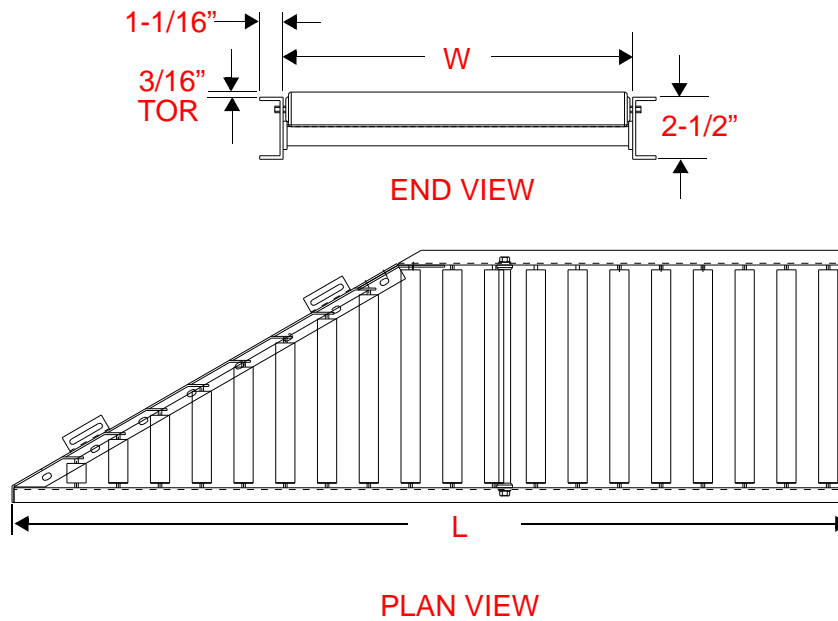


Figure C - 3 Light Duty Roller Conveyor - 30°/45° Straight Junction (30°LMRD Assembly Shown)

DESIGNATION	GRJ.
(STYLE) ANGLE	(14L) 30° straight. (18L) 45° straight.
WIDTHS	10", 16" 22" W.
ROLLER	G138KP.
ROLLER CENTERS	1-1/2" and 3" centers.
"TOR"	"Top Of Roller" is 3/16" above top flange of frame.
FRAME RAIL	2-1/2" deep x 1-1/16" x 12 ga. formed steel channel.
CROSSMEMBER	Bolted type; .84" dia. with welded nut inserts. Four (4) per 10'-0"; three (3) per 5'-0". Bolted end crossmember with formed roller axle tabs at the spur end
STANDARD COUPLER	None
OPTIONAL COUPLER	Rod at one end (see Figure C-10).
CAPACITY	Equal to or greater than straight section with same specifications.
ASSEMBLY	RMLD - Right-hand merge / left hand divert. LMRD - Left-hand merge / right-hand divert.

Light Duty Vertical Gate

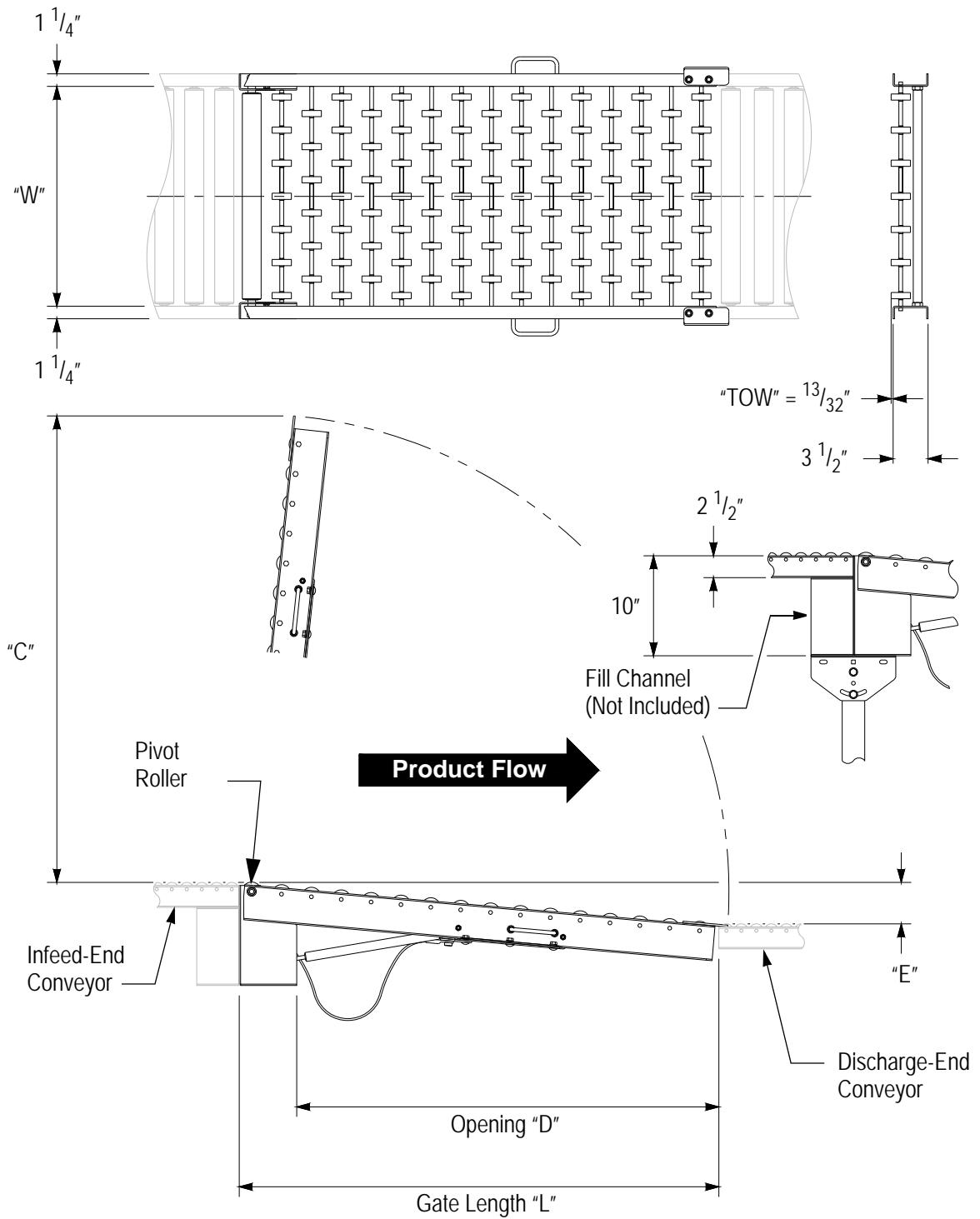


Figure C - 4 Light Duty Vertical Gate (see Table C-2)

Table C-2 Vertical Gate Variable Dimensions (see Figure C-4)

"L"	"C"	"D"	"E" (Recommended)
3' - 0"	34 11/16"	30 1/4"	3"
3' - 6"	40 11/16"	36 1/4"	3 1/2"
4' - 0"	46 11/16"	42 1/4"	4"

Note that the maximum allowable slope in the "down" position is 6°.

DESIGNATION	VGR GASPR
STYLE	01L
LENGTHS	3'-0", 3'-6" and 4'-0"
WIDTHS	10", 16", 22" W
ROLLERS	No. G138
AXLE CENTERS	1-1/2" or 3"
"TOR"	"Top Of Roller" is 7/32" above top flange of side rail.
FRAME RAIL	2-1/2" deep x 1-1/4" x 12 ga. formed aluminum channel with welded tubular spreader.
CENTER FLATS	1-1/2" x 10 ga. (1 per 10" W; 2 per 16" W; 3 per 22" W.
LIFT ASSIT	One or two gas springs. Designed lift force = 25 lbs.
POSITION SENSOR (OPTIONAL)	Limit switch with rotary arm actuator (for spring-loaded gate only).
CAPACITY	Equal to or greater than straight section with same specifications.
CONNECTION	Attachment components (not included) to connect to 2-1/2" deep terminal end of adjoining (upstream) conveyor).

Medium Duty Straight Section

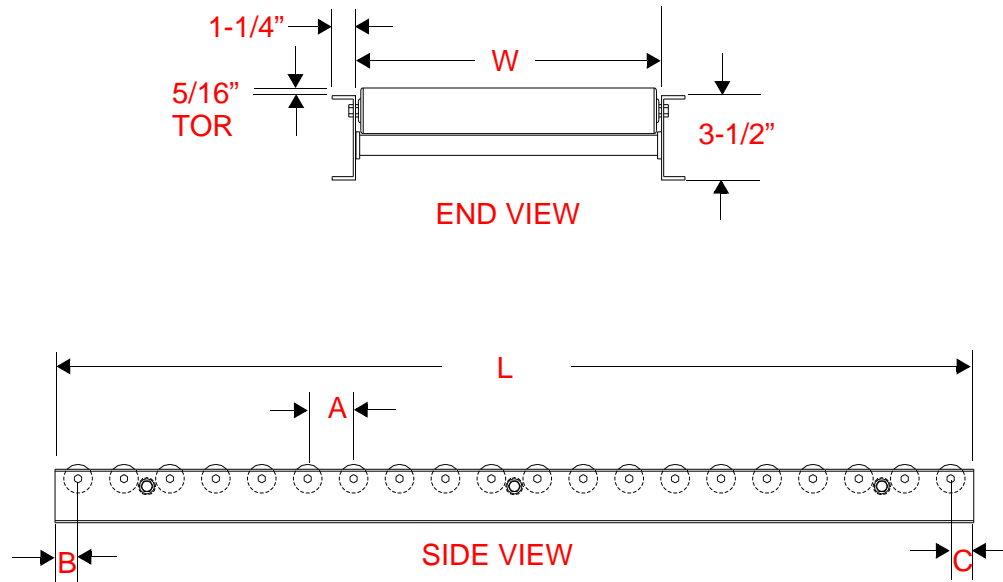


Figure C - 5 Medium Duty Roller Conveyor - Straight Section

DESIGNATION	GRS.
STYLE	01M.
LENGTHS	5'-0" and 10'-0"
WIDTHS	16", 22", 28", 34", 40" W.
STANDARD ROLLER	No. G19G1 P.
ROLLER CENTERS	3", 4", 4-1/2", 6" W.
ROLLER END SPACING	See Figure C-4 and Table C-3.

Table C-3 Roller End Spacing

Roller Center ("A")	10'-0" Section		5'-0" Section	
	"B"	"C"	"B"	"C"
3"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
4"	2"	2"	2"	2"
4-1/2"	1-1/2"	1-1/2"	3"	3"
6"	1-1/2"	4-1/2"	1-1/2"	4-1/2"

“TOR”	“Top Of Roller” is 5/16” above top flange of frame
FRAME RAIL	3-1/2” deep x 1-1/4” x 10 ga. formed steel channel.
CROSSMEMBER	Bolted type; .84” dia. with welded nut inserts. 4 per 10’-0”, 3 per 5’-0”
COUPLER	Connecting flat (See Figure C.11).
CAPACITY	1100 lbs. (less section weight) distributed on 10’ section supported at 10’ centers

Medium Duty Curve Section

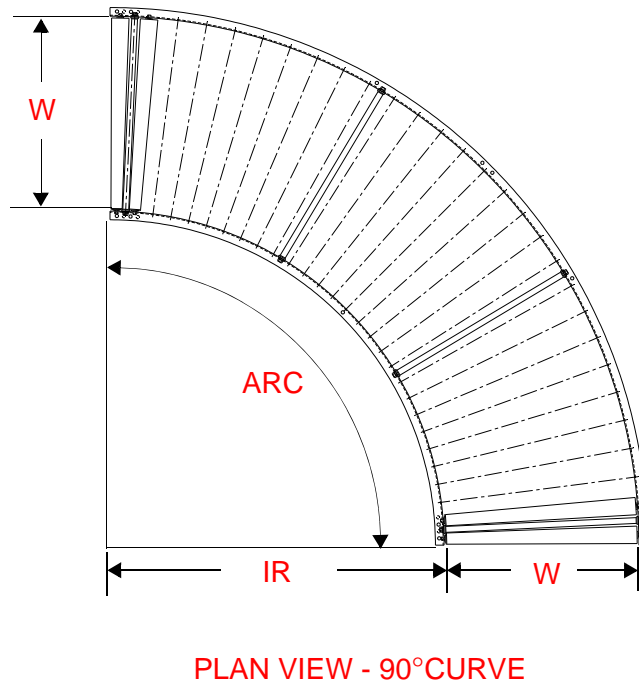
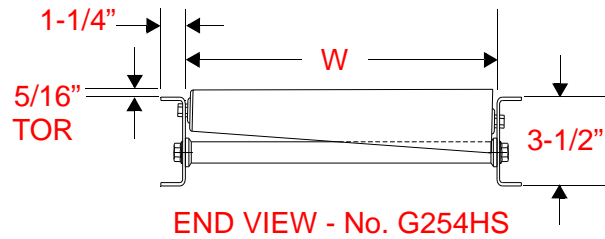
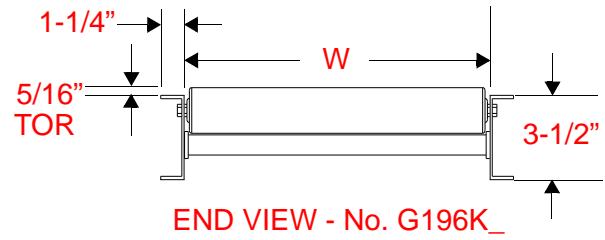


Figure C - 6 Medium Duty Roller Conveyor - Curve Section

DESIGNATION	GRC.
(STYLE) ARC	(05M) 90°; (06M) 60°; (07M) 45°; (08M) 30°.
WIDTHS	16", 22", 28", 34", 40" W
STANDARD ROLLER/ FRAME TYPE	No. G196G1/26IR. No. G254HS/26IR and TTF
ROLLER CENTERS	No. G196G1 = 2-5/8" spacing at inside rail. No. G254HS = 2-5/8" spacing at inside rail.
"TOR"	"Top Of Roller" is 5/16" above top flange of frame
FRAME RAIL	26IR - 2'-6" inside radius (IR) all widths. TTF - 16" W = 2'-6" IR; 22" W = 3'-4" IR; 28" W = 4'-0" IR; 34" W, 40" W = 5'-0" IR
FRAME TYPE/RADIUS	3-1/2" deep x 1-1/4" x 10 ga. formed steel channel.
CROSSMEMBER	Bolted type; .84" dia. with welded nut inserts. Four (4) per 90° and 60°; three (3) per 45° and 30°.
COUPLER	Connecting flat (See Figure C-11)
CAPACITY	Equal to or greater than straight section with same specifications.

Medium Duty Junctions

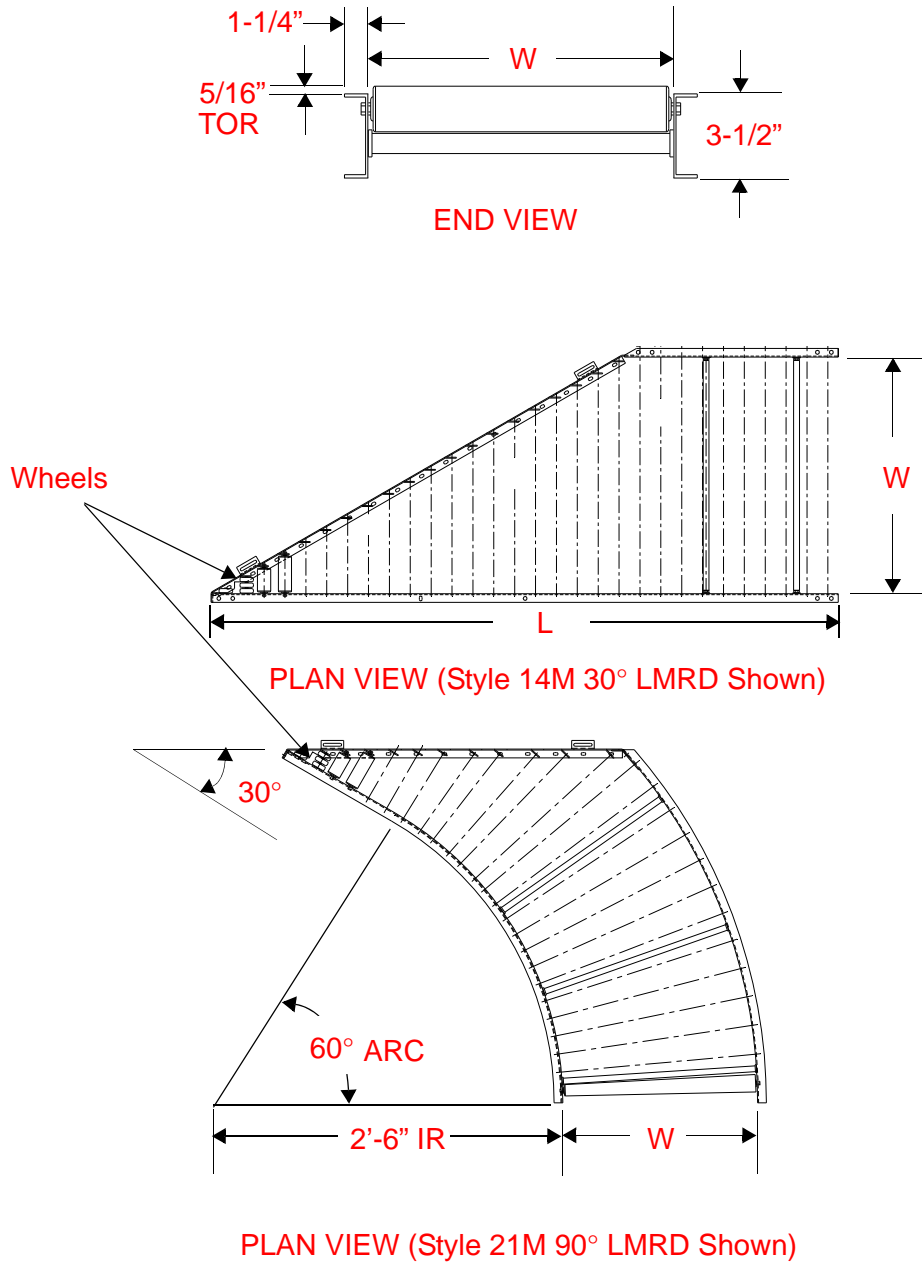


Figure C - 7 Medium Duty Roller Conveyor - 30°/45° Straight Junction; - 90° Curve Junction

DESIGNATION	GRJ
(STYLE) ANGLE	(14M) 30° straight; (18M) 45° straight; (21M) 90° curve.
WIDTHS/LENGTH	16", 22", 28" W = 5'-0" L; 34" and 40" W = 7'-6" L.
STANDARD ROLLERS/ WHEELS	14M & 18M - No. G196G1/No. 100 wheel. 21M - No. G254HS / No. G196KP/No. 100 wheel.
ROLLER CENTERS	(14M, 18M) 3" centers. (21M) 2-5/8" at inside radius (IR).
"TOR"	"Top Of Roller" is 5/16" above top flange of frame.
FRAME RAIL	3-1/2" deep x 1-1/4" x 10 ga. formed steel channel.
FRAME TYPE	21M - 26IR & TTF.
CROSSMEMBER	Bolted type; .84" dia. with welded nut inserts. Bolted end crossmember with formed roller axle tabs at the spur end.
COUPLER	Connecting flat (See Figure C.11)
CAPACITY	Equal to or greater than straight section with same specifications.
ASSEMBLY	RMLD - Right-hand merge / left-hand divert. LMRD - Left-hand merge / right-hand divert.

Medium Duty Vertical Gate

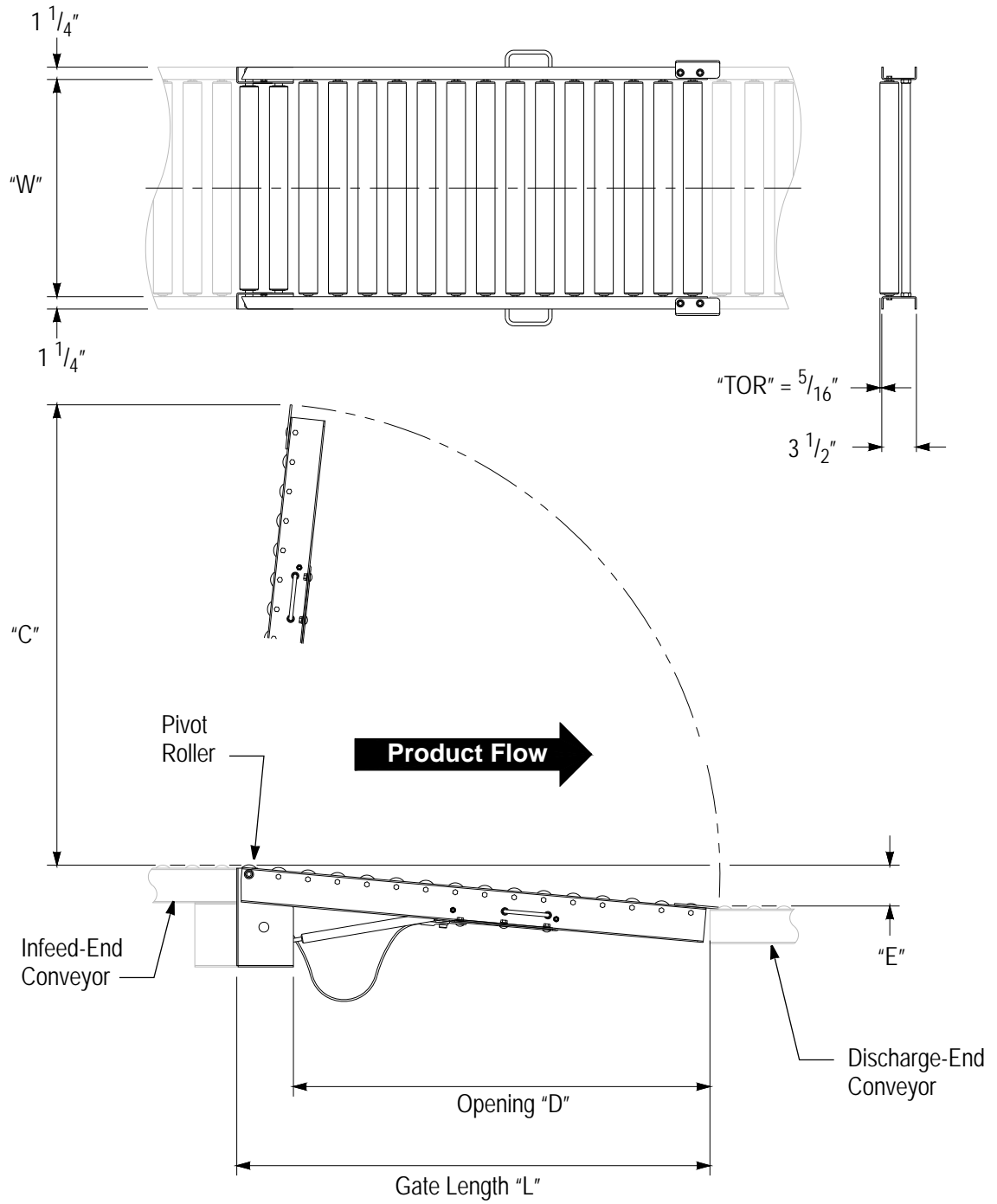


Figure C - 8 Medium Duty Wheel Conveyor - Vertical Gate

Table C-4 Variable Dimensions - Medium-Duty Vertical Gate (see Figure C-8)

"L"	"C"	"D"	"E" (Recommended)
3' - 0"	34 ¹¹ / ₁₆ "	30 ¹ / ₄ "	3"
4' - 0"	46 ¹¹ / ₁₆ "	42 ¹ / ₄ "	4"

Note that the maximum allowable slope in the "down" position is 6°.

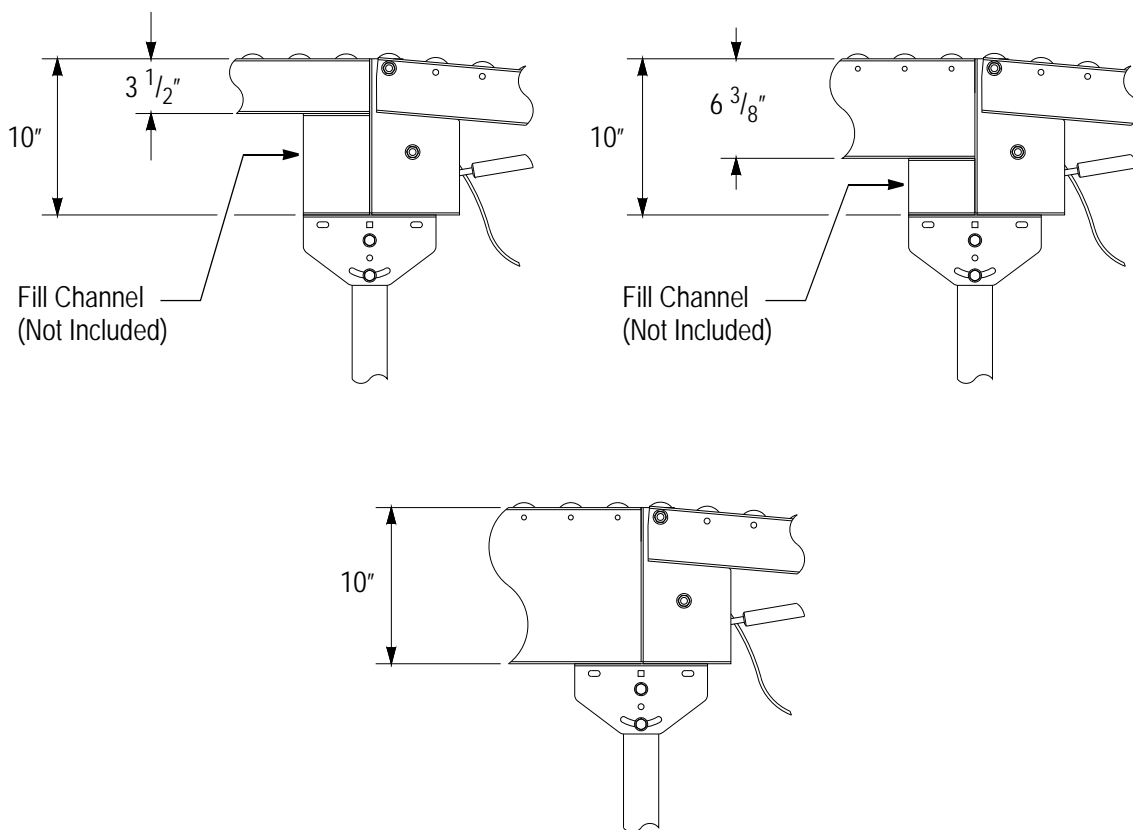
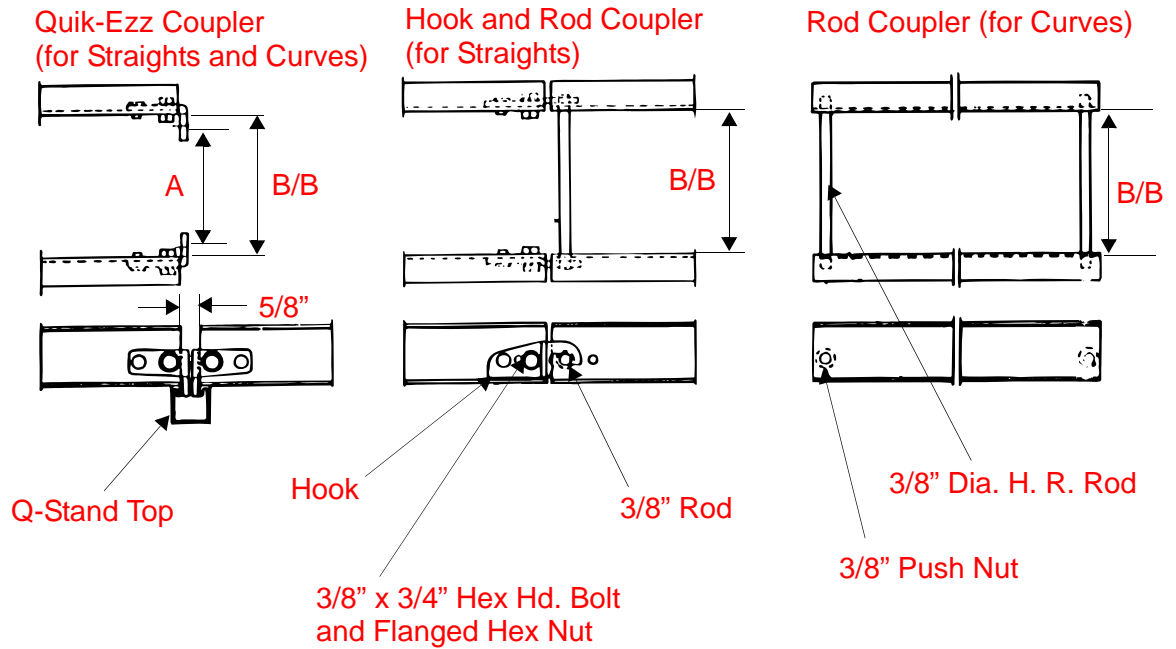


Figure C - 9 Conveyor Connections – Medium-Duty Vertical Gates

DESIGNATION	VGR GASPR
STYLE	01M
LENGTHS	3'-0", 3'-6" and 4'-0"
WIDTHS	16", 22", 28", 34", 40" W
ROLLERS	No. G196G1
PIVOT ROLLER	No. G196G1
AXLE CENTERS	3" with 1-1/2" end spacing.
"TOW"	"Top Of Wheel" is 11/32" above top flange of frame.
FRAME RAIL	3-1/2" deep x 1-1/2" x 10 ga. formed aluminum channel with welded tubular spreader.
CENTER FLATS	1" x 10 ga.; 1 per 16" W; 2 per 22"/28" W; 3 per 34"/40" W
LIFT ASSIST	One or two gas springs. Designed lift force: 25 Lbs.
POSITION SENSOR (OPTIONAL)	Limit switch with rotary arm actuator.
CAPACITY	Equal to or greater than straight section with same specification.
CONNECTION	Attachment components (not included) to connect to 3-1/2", 6-3/8", or 10" deep terminal end of adjoining (upstream) conveyor.

Couplers



A	B/B
8-1/2"	10"
16"	1'-2-1/2"
22"	1'-8-1/2"

Figure C - 10 Light Duty Gravity Conveyor - Optional Couplers

Couplers

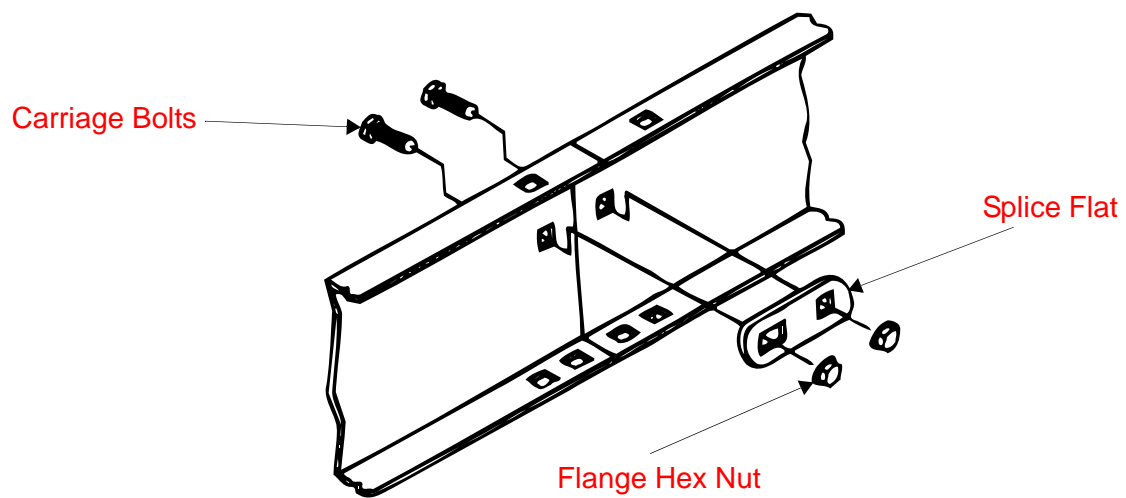


Figure C - 11 Splice Flat Coupler - Medium Duty

SECTION D: ENGINEERING DATA

Determining Conveyor Width (W)

The width of the conveyor should be at least 2" greater than the width of the widest product to be handled. The product width is the dimension perpendicular to the direction of travel. The proper conveyor width should be the next larger standard width. Standard widths are 16", 22", 28", 34", and 40". However, this applies only to straight sections.

When a system includes curves, the formula shown in Figure D.1 may be used to determine the proper width.

When the required width for a curve is wider than the corresponding straight conveyors, the additional width can be made up by using standoff brackets with the side guides instead of a wider curve. The brackets allow the guides to be mounted two inches outside both conveyor side frames.

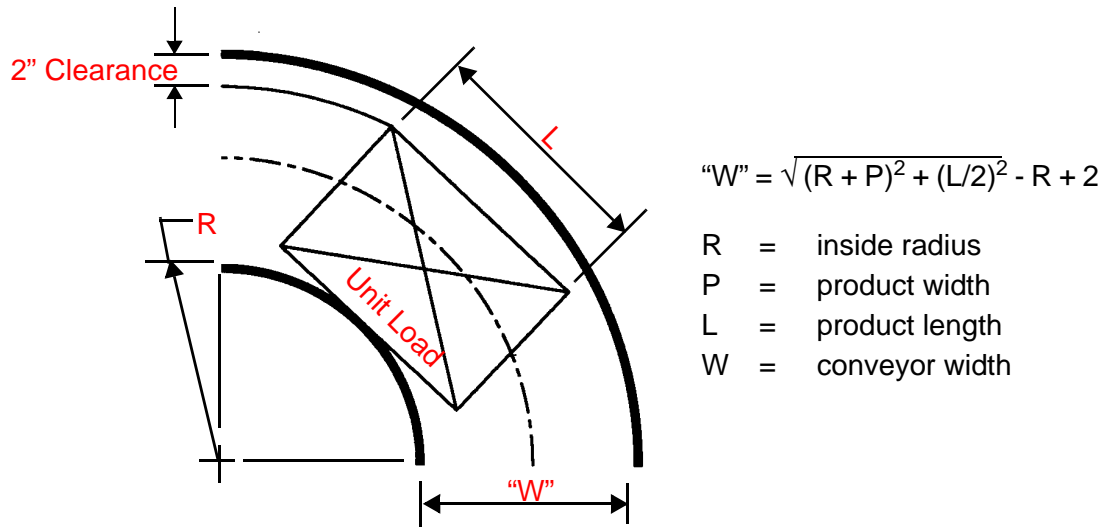


Figure D - 1 Calculation of Width for Curve Section

SECTION E: LAYOUT DIMENSION

Use the following information for designing the layout of the CS Gravity Roller Conveyor. All dimensions are in inches.

Style 5/6/7/8 - 90°, 60°, 45°, 30° Curve

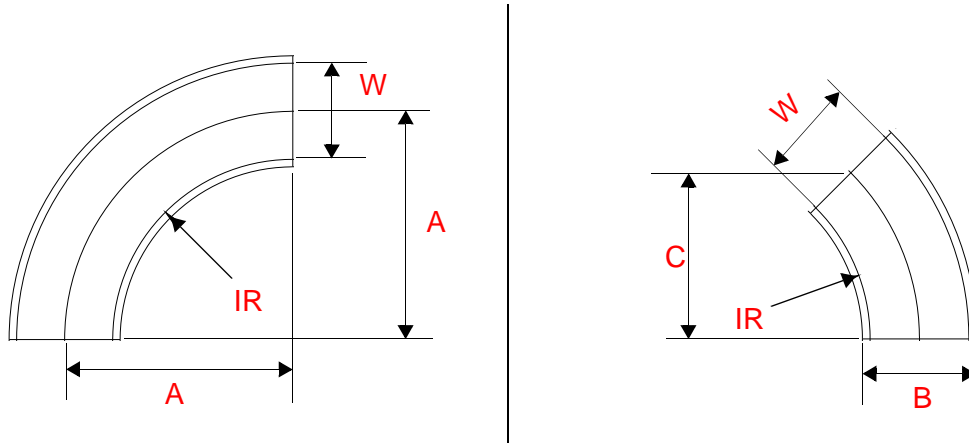


Figure E - 1 Style 5/6/7/8 - 90°, 60°, 45°, 30° Curve

Table E-1 Style 5/6/7/8 - 90°, 60°, 45°, 30° Curve Dimensions

STYLE	ARC	DIM.	10"	16"	22"	28"	34"	40"
Type 26IR FRAME								
		IR	30"	30"	30"	30"	30"	30"
05	90°	A	35"	38"	41"	44"	47"	50"
06	60°	B	17-1/2"	19"	20-1/2"	22"	23-1/2"	25"
		C	30-5/16"	32-15/16"	35-1/2"	38-1/8"	40-11/16"	43-5/16"
07	45°	B	10-1/4"	11-1/8"	12"	12-7/8"	13-3/4"	14-5/8"
		C	24-3/4"	26-7/8"	29"	31-1/8"	33-1/4"	35-3/8"
08	30°	B	4-11/16"	5-1/16"	5-1/2"	5-7/8"	6-5/16"	6-11/16"
		C	17-1/2"	19"	20-1/2"	22"	23-1/2"	25"
Type TTF FRAME								
		IR		30"	40"	48"	60"	60"
05	90°	A		38"	51"	62"	77"	80"
06	60°	B		19"	25-1/2"	31"	38-1/2"	40"
		C		32-15/16"	44-3/16"	53-11/16"	66-11/16"	69-5/16"
07	45°	B		11-1/8"	14-15/16"	18-3/16"	22-9/16"	23-7/16"
		C		26-7/8"	36-1/16"	43-13/16"	54-7/16"	56-9/16"
08	30°	B		5-1/16"	6-13/16"	8-5/16"	10-5/16"	10-11/16"
		C		19"	25-1/2"	31"	38-1/2"	40"

Style 14/18 - 30°, 45° Straight Junctions

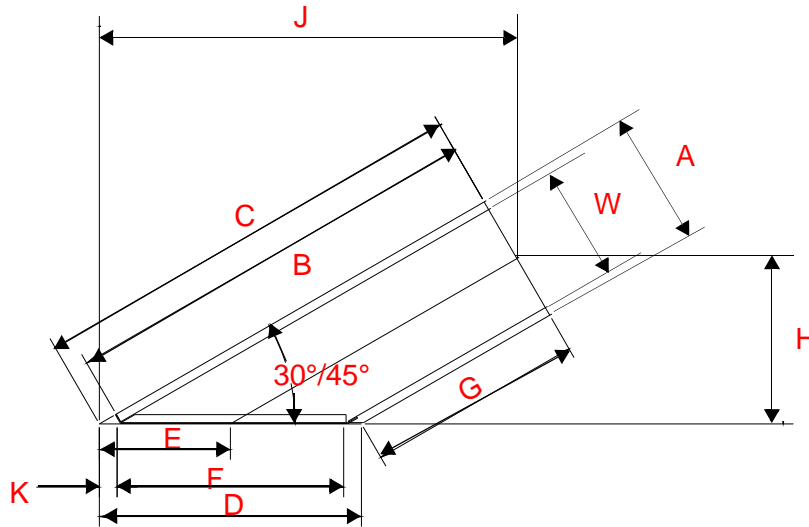


Figure E - 2 Style 14/18 - 30°, 45° Light Duty Straight Junction

Table E-2 Style 14/18 - 30°, 45° Light Duty Straight Junction Dimensions

W	A	B	C	D	E	F	G	H	J	K
LIGHT-DUTY - STYLE 14 - 30 Degree STRAIGHT JUNCTION										
10"	12-1/8"	60"	61-3/16"	24-1/4"	12-1/8"	20"	40-3/16"	25-11/16"	56-9/16"	2-1/8"
16"	18-1/8"	60"	61-3/16"	36-1/4"	18-1/8"	32"	30-7/16"	23-1/16"	58-1/16"	2-1/8"
22"	24-1/8"	60"	61-3/16"	48-1/4"	24-1/8"	44"	20-1/16"	20-1/2"	59-9/16"	2-1/8"
LIGHT-DUTY - STYLE 18 - 45 Degree STRAIGHT JUNCTION										
10"	12-1/8"	60"	61-3/16"	17-1/8"	8-9/16"	14-1/8"	48-15/16"	38-7/8"	47-7/16"	1-1/2"
16"	18-1/8"	60"	61-3/16"	25-5/8"	12-13/16"	22-5/8"	42-15/16"	36-3/4"	49-9/16"	1-1/2"
22"	24-1/8"	60"	61-3/16"	34-1/8"	17-1/16"	31-1/8"	36-15/16"	34-5/8"	51-11/16"	1-1/2"
MEDIUM-DUTY - STYLE 14 - 30 Degree STRAIGHT JUNCTION										
16"	18-1/2"	60"	62-3/16"	37"	18-1/2"	32"	30-1/8"	23-1/16"	58-7/16"	2-1/2"
22"	24-1/2"	60"	62-3/16"	49"	24-1/2"	44"	19-3/4"	20-1/2"	59-15/16"	2-1/2"
28"	20-1/2"	60"	62-3/16"	61"	30-1/2"	56"	9-5/16"	17-7/8"	61-7/16"	2-1/2"
34"	36-1/2"	90"	92-3/16"	73"	36-1/2"	68"	28-15/16"	30-1/4"	88-15/16"	2-1/2"
40"	42-1/2"	90"	92-3/16"	85"	42-1/2"	80"	18-9/16"	27-11/16"	90-7/16"	2-1/2"
MEDIUM-DUTY - STYLE 18 - 30 Degree STRAIGHT JUNCTION										
16"	18-1/2"	60"	61-1/4"	26-3/16"	13-1/16"	22-5/8"	42-3/4"	36-3/4"	49-7/8"	1-3/4"
22"	24-1/2"	60"	61-1/4"	34-5/8"	17-5/16"	31-1/8"	36-3/4"	34-5/8"	52"	1-3/4"
28"	20-1/2"	60"	61-1/4"	43-1/8"	21-9/16"	39-5/8"	30-3/4"	32-1/2"	54-1/16"	1-3/4"
34"	36-1/2"	90"	91-1/4"	51-5/8"	25-13/16"	48-1/16"	54-3/4"	51-5/8"	77-7/16"	1-3/4"
40"	42-1/2"	90"	91-1/4"	60-1/8"	30-1/16"	59-9/16"	48-3/4"	49-1/2"	79-9/16"	1-3/4"

Style 21 - 90° Curve Junctions

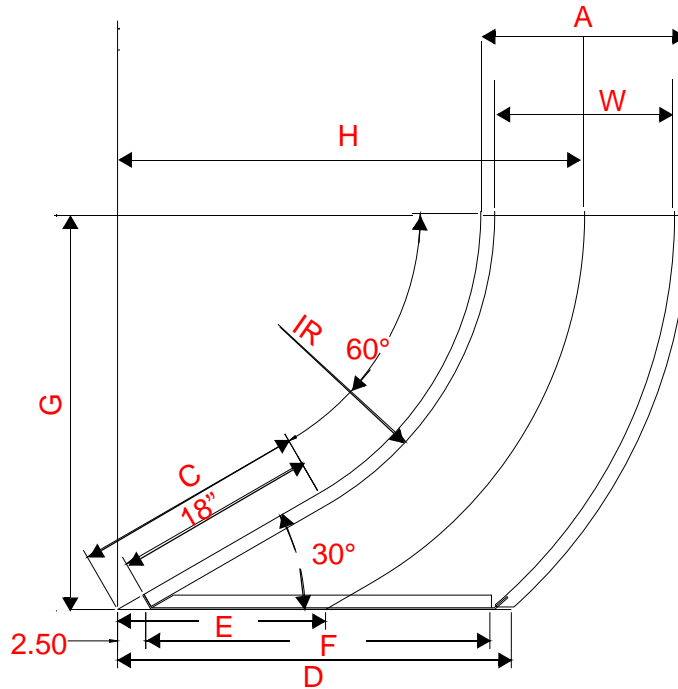


Figure E - 3 Style 21 90° Curve Junction

Table E-3 Style 21 90° Curve Junction Dimensions

W	IR	A	C	D	E	F	G	H	K
LIGHT-DUTY - 90 Degree CURVE JUNCTION / 26IR FRAME									
10"	30"	12-1/8"	20-5/16"	24-1/4"	12-1/8"	19-15/16"	35-1/4"	38-1/8"	2-1/8"
16"	30"	18-1/8"	20-5/16"	34-3/8"	17-3/8"	30-5/8"	35-1/4"	41-1/8"	2-1/8"
22"	30"	24-1/8"	20-5/16"	42-13/16"	24-1/8"	39-1/4"	35-1/4"	44-1/8"	2-1/8"
MEDIUM-DUTY - 90 Degree CURVE JUNCTION / 26IR FRAME									
16"	30"	18-1/2"	20-5/8"	35-1/16"	17-13/16"	30-5/8"	35-1/4"	41-9/16"	2-1/2"
22"	30"	24-1/2"	20-5/8"	43-1/2"	24-9/16"	39-5/16"	35-1/4"	44-9/16"	2-1/2"
28"	30"	20-1/2"	20-5/8"	51-3/16"	29-15/16"	47-1/8"	35-1/4"	47-9/16"	2-1/2"
34"	30"	36-1/2"	20-5/8"	58-1/2"	34-11/16"	54-1/2"	35-1/4"	50-9/16"	2-1/2"
40"	30"	42-1/2"	20-5/8"	65-1/2"	39-1/16"	61-9/16"	35-1/4"	53-9/16"	2-1/2"
MEDIUM-DUTY - 90 Degree CURVE JUNCTION / TTF FRAME									
16"	30"	18-1/2"	20-5/8"	35-1/16"	17-13/16"	30-5/8"	35-1/4"	41-9/16"	2-1/2"
22"	40"	24-1/2"	20-5/8"	44-1/8"	24-1/2"	39-7/8"	43-7/8"	49-9/16"	2-1/2"
28"	48"	20-1/2"	20-5/8"	52-3/4"	30-1/16"	48-9/16"	50-13/16"	56-9/16"	2-1/2"
34"	60"	36-1/2"	20-5/8"	61-9/16"	35-5/16"	57-7/16"	61-3/16"	65-9/16"	2-1/2"
40"	60"	42-1/2"	20-5/8"	69-1/4"	40-1/16"	65-1/8"	61-3/16"	68-9/16"	2-1/2"

SECTION F: ACCESSORIES

See the *Accessories Product Manual 8700* for the following accessory items available for the Gravity Roller Conveyor.

- Floor supports & ceiling hangers
- Side guides
- Case stops

SECTION G: INSTALLATION PROCEDURES

Introduction

Accepting Shipment

Immediately upon delivery, check that all equipment received agrees with the bill of lading or carrier's freight bill. Any shipping discrepancy or equipment damage should be clearly noted on the freight bill before signing.

Shortages or Errors

Report any shortages or errors to the Customer Service in writing within ten (10) days after receipt of shipment.

Note: It is very important that you compare the Order Acknowledgment against the actual material received when you receive the shipment so you have enough lead time to order any missing parts. If you find that a part is missing during assembly, you may have to discontinue assembly while you wait for the part to arrive.

Lost or Damaged Shipment

Report lost shipments to our Shipping Department.

If shipping damage is evident upon receipt of the conveyor, note the extent of the damage on the freight bill and immediately contact the transportation carrier to request an inspection. Do not destroy the equipment crating and packing materials until the carrier's agent has examined them. Unless otherwise agreed by the seller, the Purchaser (user) shall be responsible for filing claims with the transportation carrier. A copy of the inspection report along with a copy of the freight bill should be sent to our Traffic Department.

Claims and Returns

All equipment furnished in accordance with the Manufacturer's Agreement is not returnable for any reason except when authorized in writing by the Seller. Notification of return must be made to the Customer Service Department, and if approved, a "Return Authorization Tag" will be sent to the Purchaser (user). The return tag, sealed in the "Return Authorization Envelope" should be securely affixed to the exterior surface on any side of the shipping carton (not Top or Bottom), or affixed to any smooth flat surface on the equipment, if not boxed.

Send authorized return shipment(s) transportation charges prepaid to the address indicated on the Return Authorization Tag. If initial shipment is refused, the Purchaser (User) shall be liable for all freight charges, extra cost of handling, and other incidental expenses.

Codes and Standards

The conveyor equipment is designed and manufactured to comply with the American National Standard Institute's "SAFETY STANDARDS FOR CONVEYORS AND RELATED EQUIPMENT" (ANSI B20.1) and with the National Electrical Code (ANSI/ NFPA70).

The Purchaser/User shall be familiar with, and responsible for, compliance with all codes and regulations having jurisdiction regarding the installation, use, and maintenance of this equipment.

Warning Signs

Warning signs and labels posted on or near the conveyor equipment shall not be removed, painted over, or altered at any time. All safety devices, warning lights, and alarms associated with the conveyor system should be regularly tested for proper operation and serviced as needed. If the original safety item(s) become defective or damaged, refer to the conveyor parts list or bills-of-materials for replacement part numbers.

Safety Features

- DO turn off conveyor power source(s) and affix appropriate lockout/tagout device(s) to operating controls before servicing the equipment. ONLY trained and qualified personnel who are aware of the safety hazards should perform equipment adjustments or required maintenance while the conveyor is in operation.
- DO observe all warning signs, lights, and alarms associated with the conveyor operation and maintenance, and be alert at all times to automatic operation(s) of adjacent equipment.
- DO use extreme caution near moving conveyor parts to avoid the hazard of hands, hair, and clothing being caught.
- DO NOT sit on, stand on, walk, ride, or cross (over or under) the conveyor at any time except where suitable catwalks, gates, or bridges are provided for personnel travel.
- DO NOT attempt to repair any equipment while the conveyor is running, replace any conveyor component without appropriate replacement parts, or modify the conveyor system without prior approval by the manufacturer.
- DO NOT operate the conveyor until all safety guards are securely in place, all tools and non-product materials are removed from or near the conveying surfaces, and all personnel are in safe positions.
- DO NOT remove or modify any safety devices provided on or with the conveyor.
- DO NOT clear jams or reach into any unit before first turning off the equipment power source(s) and affixing appropriate lockout/tagout device(s).

Parts Replacement

To minimize production downtime, selected conveyor spare parts should be stocked for replacement of defective components when required. If quantity requirements or code numbers are not indicated on the conveyor parts list, refer to the equipment bill(s)-of-materials. For added convenience, a list of selected spare parts is included in this manual (see Section I).

Factory Assistance

Contact Field Service for installation, operation, or maintenance assistance, or Customer Service and Support for replacement parts.

Assembling the Conveyor

1. Before starting installation, remove any shipping braces and filler blocks and check the alignment of the frames and rollers of each section. Corner-to-corner diagonal frame measurements of each conveyor section should be equal within 1/16".
2. Starting at one end of the conveyor, position the floor supports or overhead hangers to the first conveyor section, and fasten into place. For additional information, refer to *Product Manual 5310*.

SECTION H: MAINTENANCE

Recommended service checks and equipment maintenance are outlined below for typical, intermittent-duty conveyor applications. Additional maintenance and servicing schedule adjustments may be required for continuous-duty operation or extreme environmental conditions.

All newly installed equipment should be frequently inspected and serviced as needed during the first 40 hours of operation; thereafter, an appropriate maintenance program should be established and followed (see Table H.1).

Maintaining separate service log sheets on each type of conveyor is recommended for plants operating more than one shift. Each log sheet should show dates, detailed inspection service information, and name or initials of person(s) performing the equipment inspection or service for future reference.

CAUTION: Before performing maintenance on a conveyor, make certain that the conveyor's power disconnect is locked in the OPEN position and tagged to prevent accidental or unexpected application of power. Do not perform maintenance while the conveyor is running unless specifically instructed to do so in this manual.

Note: Other than checking of chain tension, it is NOT necessary to have the conveyor turned ON in order to perform any of the work described in this section. Maintenance must be performed only by qualified personnel who are trained in normal and emergency operations of the conveyor and who are knowledgeable of all safety devices, their locations, and functions.

Before restarting a conveyor:

- Remove all foreign objects from the conveyor.
- Be sure that all guards and safety devices are properly installed and working.
- Make sure that all persons are clear of the conveyor and are aware that the conveyor is about to be restarted.

Table H-1 Scheduled Maintenance

	Components	Item Check									
		Lubrication	Oil Level	Tension	Wear	Alignment	Fasteners	Set Screws	Proper Position	Physical Condition	Operation
Weekly	Carrier Rollers								X	X	X
	Electrical Devices								X	X	X
	General Structure						X			X	X
	Safety Guards/Devices								X	X	X
Monthly	Supports & Hangers						X			X	
	Vertical Gate								X		X

Scheduled Maintenance

Intervals indicated for performing maintenance should be considered for an 8 hour per day operation. An application may subject the equipment to conditions that would necessitate more frequent maintenance. This may best be determined by performing maintenance more frequently when the conveyor is first put into operation, and then lengthening the intervals based on experience.

SECTION I: PARTS IDENTIFICATION

Introduction

The purpose of this section is to provide a list of recommended spare parts for a solid preventative maintenance program and also to minimize the chances for extended DOWNTIME.

The following pages illustrate the location of these recommended spare parts as they apply to each particular unit. Keep in mind that these illustrations apply to the STANDARD product line ONLY.

Roller Sections

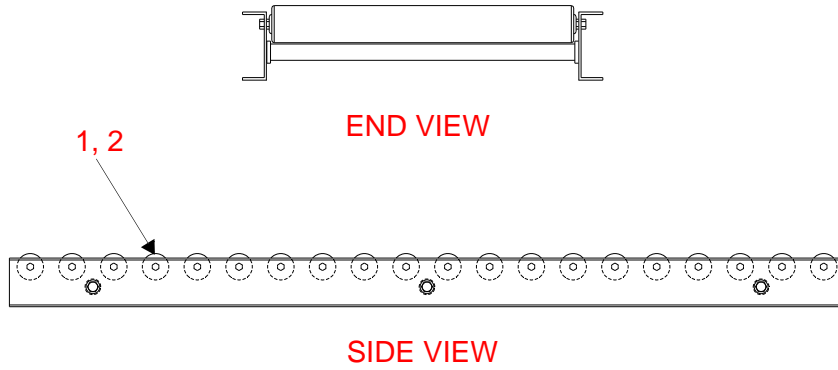


Figure I - 1 Straight Roller Section

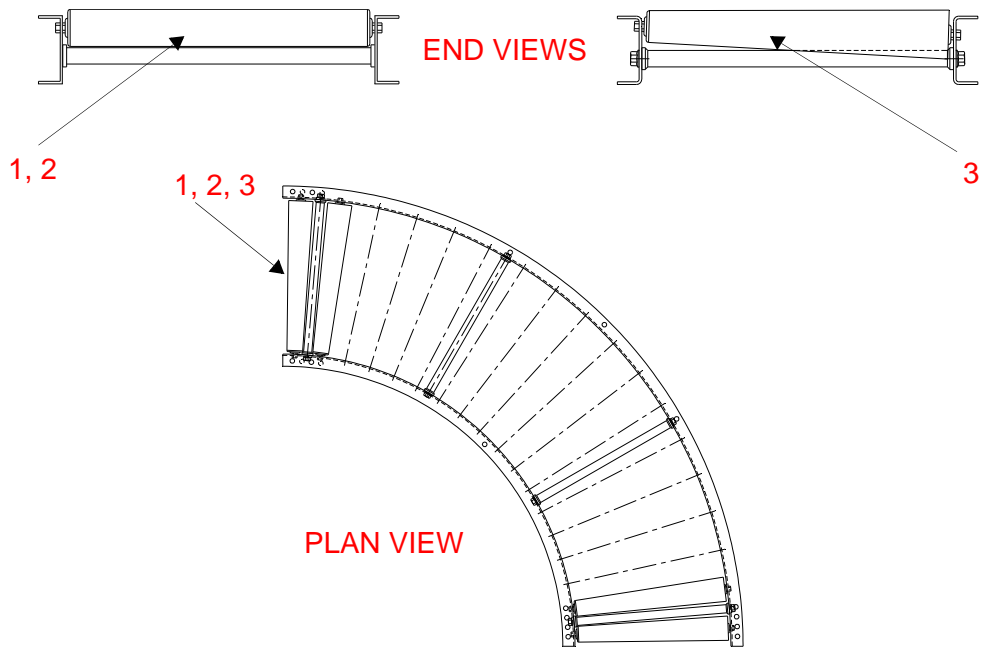


Figure I - 2 Curve Roller Section

Roller Junctions

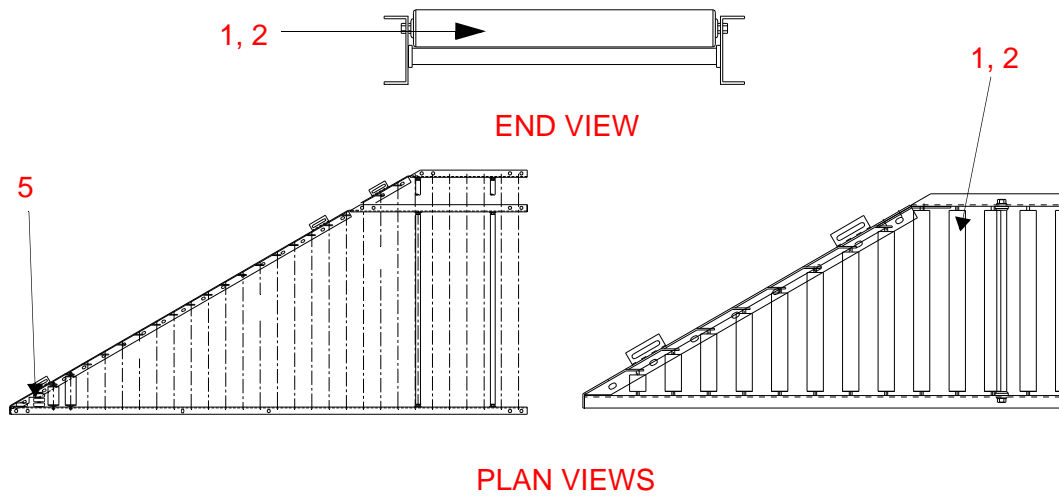


Figure I - 3 Straight Roller Junction

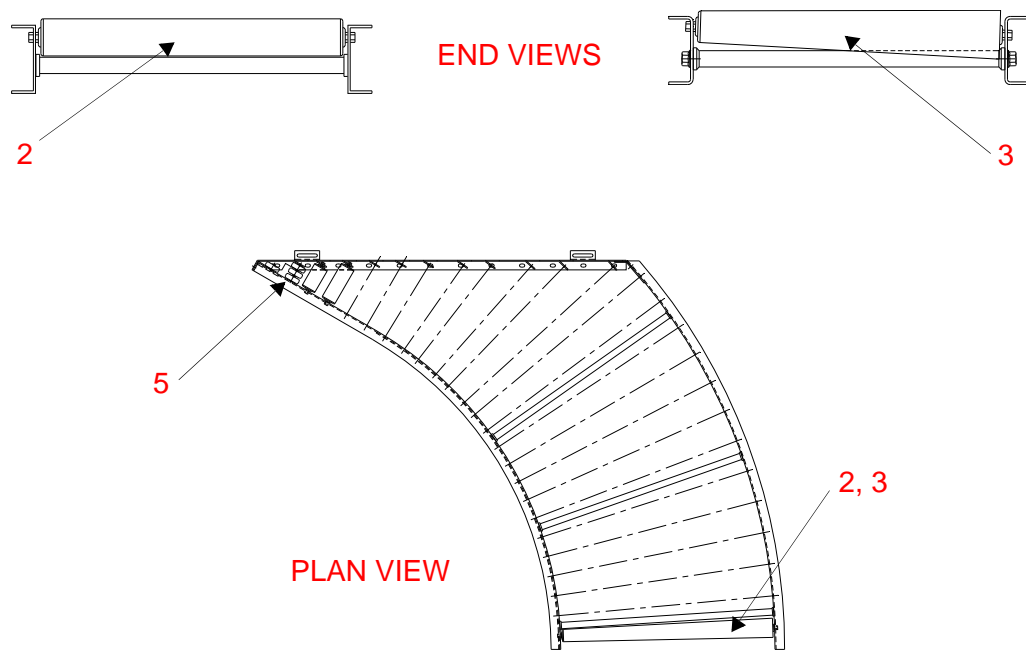


Figure I - 4 Curve Roller Junction

Vertical Gate Sections

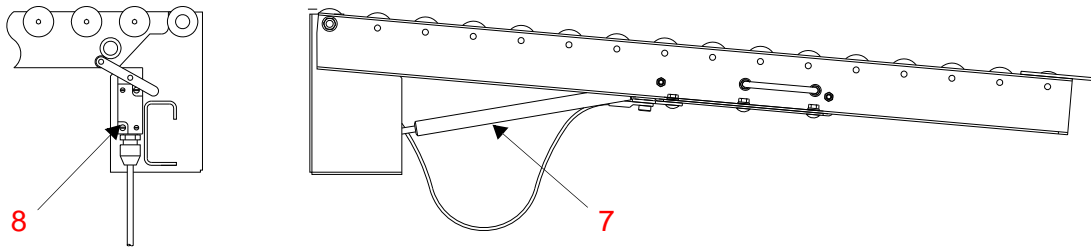


Figure I - 5 Vertical Gate Sections
Ball Caster Module

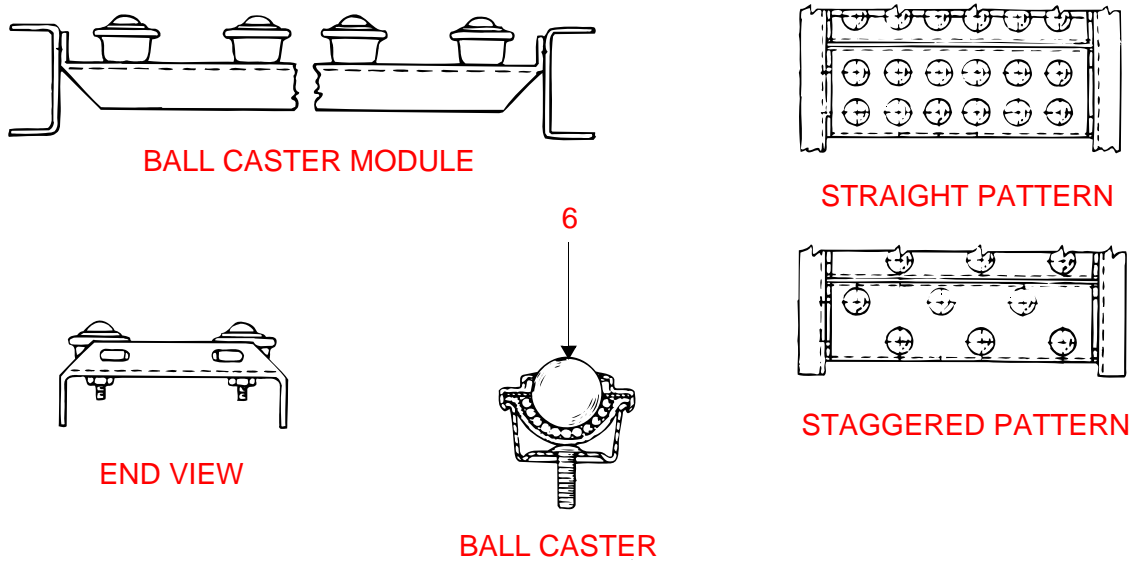


Figure I - 6 Ball Caster Module

Common Width Related Parts

Conveyor Width "W"	(Key No.), Roller No., Suffix, & Part Numbers			
	(1) No. G138KP	(2) No. G196G1	(3) No. G254HS	(4) No. G187PL
2-1/8"	495171	-	-	-
2-3/16"	495172	-	-	-
2-1/4"	495173	-	-	-
3-1/16"	495174	-	-	-
3-1/2"	495175	-	-	-
3-5/8"	495176	-	-	-
3-13/16"	495177	-	-	-
3-7/8"	495178	7495069	-	-
4"	-	7495070	-	-
3-15/16"	495179	-	-	-
4-13/16"	495180	-	-	-
5-5/16"	495181	-	-	-
5-9/16"	495182	-	-	-
5-5/8"	-	7495071	-	-
5-11/16"	495183	-	-	-
6-5/8"	495184	-	-	-
6-13/16"	495185	-	-	-
7"	-	7495072	-	-
7-5/16"	495186	7495073	-	-
7-3/8"	495187	-	-	-
7-7/16"	495188	-	-	-
8-5/16"	495189	-	-	-
8-1/2"	501007	-	-	-
9"	500008	-	-	-
9-1/16"	495190	7495074	-	-
9-1/8"	495191	-	-	-
9-3/16"	495192	-	-	-
9-5/8"	495193	-	-	-
9-13/16"	495194	-	-	-
10"	500010	7495075	-	509875
10-5/8"	-	7495236	-	-
10-3/4"	-	7495076	-	-
10-13/16"	-	7495237	-	-
10-7/8"	-	7495238	-	-
11-5/16"	495195	-	-	-
11-3/4"	495196	-	-	-
12-1/2"	-	7495077	-	-
12-9/16"	495197	-	-	-
12-5/8"	495198	-	-	-

Conveyor Width "W"	(Key No.), Roller No., Suffix, & Part Numbers			
12-13/16"	495199	-	-	-
12-7/8"	-	7425239	-	-
13"	-	7495078	-	-
13-1/4"	-	7495240	-	-
13-5/16"	-	7495241	-	-
13-7/16"	495200	-	-	-
13-5/8"	-	7495242	-	-
14-1/4"	-	7495079	-	-
14-5/16"	495201	-	-	-
14-3/4"	-	7495243	-	-
15-3/16"	495202	-	-	-
15-7/16"	-	7495244	-	-
15-1/2"	-	7505405	-	-
16"	500040	7495080	502050	509870
16-1/16"	495203	-	-	-
16-3/8"	-	7495245	-	-
16-15/16"	495204	-	-	-
17-1/2"	501008	-	-	-
17-5/8"	-	7495246	-	-
17-11/16"	495205	-	-	-
17-3/4"	-	7495081	-	-
17-13/16"	495206	-	-	-
18-1/2"	500245	-	-	-
18-5/8"	-	-	-	-
18-11/16"	-	7495247	-	-
19"	-	7495082	-	-
19-1/4"	-	7505408	-	-
19-7/16"	495207	7495083	-	-
19-5/8"	501006	-	-	-
20-1/16"	-	7495248	-	-
20-3/8"	-	-	-	-
21-1/8"	-	7495249	-	-
21-3/16"	495208	7495084	-	-
21-1/4"	500048	-	-	-
21-5/8"	-	7495250	-	-
22"	500060	7495085	502051	509871
22-15/16"	-	7495086	-	-
23-3/4"	-	7495251	-	-
24-5/8"	-	7495087	-	-
25"	-	7495088	-	-
25-7/8"	-	7495252	-	-
26-3/16"	-	7495253	-	-
26-3/8"	-	7495090	-	-
26-15/16"	-	7495254	-	-

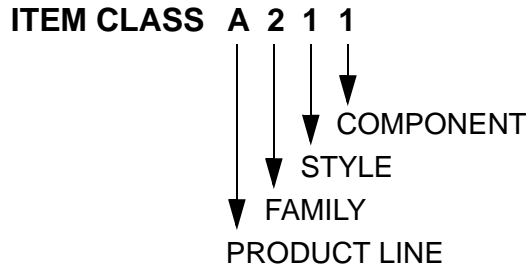
Conveyor Width "W"	(Key No.), Roller No., Suffix, & Part Numbers			
28"	-	7495091	502052	509872
28-1/8"	-	7495092	-	-
29-13/16"	-	7495093	-	-
31"	-	7495094	-	-
31-9/16"	-	7495095	-	-
31-3/4"	-	7495255	-	-
33-5/16"	-	7495096	-	-
34"	-	7495097	502053	509873
34-3/8"	-	7495256	-	-
35-1/16"	-	7495098	-	-
35-15/16"	-	7495257	-	-
36-3/4"	-	7495099	-	-
37"	-	7495100	-	-
38-1/2"	-	7495101	-	-
40"	-	7495102	502054	509874

Common Non-Width Related Parts

Key No.	Item	Part Numbers
5	Wheel - Steel, No. 100 Plain (35# Cap.)	34-0420
	Wheel - Steel, No. 100AL Plain (35# Cap.)	34-0430
	Wheel - Nylon, No. N-97 Plain	34-0380
	Wheel - Polypropylene, SS Balls (25# Cap.)	34-0491
	Wheel - H.D. Steel, No. 100HD, Plain (110# Cap.)	34-0442
6	Ball Caster - No. 1	24-0005
7	Gas Spring	381033
8	Limit Switch, 10W – 34W	562972
	Limit Switch, 40W	562973

SECTION J: PRODUCT INDEX

Light Duty - 2.5 Channel - Straight



(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRS G138 5-0/___ 1.5" CTR	16741 D	424967	424987	425007
GRS G138 5-0/___ 3.0" CTR	16741 D	424968	424988	425008
GRS G138 5-0/___ 4.5" CTR	16741 D	424969	424989	425009

ITEM CLASS A 2 1 2

(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRS G138 10-0/___ 1.5" CTR	16740 D	424961	424981	425001
GRS G138 10-0/___ 3.0" CTR	16740 D	424962	424982	425002
GRS G138 10-0/___ 4.5" CTR	16740 D	424963	424983	425003

Light Duty - 2.5 Channel - Curve - 2'-6" IR
ITEM CLASS A 2 2 1

(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRC G138 30DEG W__ 2-6IR 2.5CH	19502 D	427025	427026	427027

ITEM CLASS A 2 2 2

(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRC G138 45DEG W__ 2-6IR 2.5CH	19502 D	427019	427020	427021

ITEM CLASS A 2 2 3

(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRC G138 60DEG W__ 2-6IR 2.5CH	19502 D	427028	427029	427030

ITEM CLASS A 2 2 4

(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRC G138 90DEG W__ 2-6IR 2.5CH	19502 D	427022	427023	427024

Light Duty - 2.5 Channel - Junction Straight

ITEM CLASS A 2 4 2

(F1) ROLLER
(F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRJ G138 1.5C 30D LMRD W10	19579 D	427031	NA	NA
GRJ G138 1.5C 30D RMLD W10	19579 D	427032	NA	NA
GRJ G138 1.5C 30D LMRD W16	19580 D	NA	427033	NA
GRJ G138 1.5C 30D RMLD W16	19580 D	NA	427034	NA
GRJ G138 1.5C 30D LMRD W22	19581 D	NA	NA	427035
GRJ G138 1.5C 30D RMLD W22	19581 D	NA	NA	427036

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRJ G138 3C 30D LMRD W10	19582 D	427043	NA	NA
GRJ G138 3C 30D RMLD W10	19582 D	427044	NA	NA
GRJ G138 3C 30D LMRD W16	19583 D	NA	427045	NA
GRJ G138 3C 30D RMLD W16	19583 D	NA	427046	NA
GRJ G138 3C 30D LMRD W22	19584 D	NA	NA	427047
GRJ G138 3C 30D RMLD W22	19584 D	NA	NA	427048

LMRD = Left Hand Merge/Right Hand Diverge
 RMLD = Right Hand Merge/Left Hand Diverge
 3C = 3" Centers
 30D = 30 Degree

Light Duty - 2.5 Channel - Junction Straight

ITEM CLASS A 2 4 3

(F1) ROLLER
 (F2) COUPLER

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRJ G138 1.5C 45DEG LMRD W10	19585 D	427037	NA	NA
GRJ G138 1.5C 45DEG RMLD W10	19585 D	427038	NA	NA
GRJ G138 1.5C 45DEG LMRD W16	19586 D	NA	427039	NA
GRJ G138 1.5C 45DEG RMLD W16	19586 D	NA	427040	NA
GRJ G138 1.5C 45DEG LMRD W22	19587 D	NA	NA	427041
GRJ G138 1.5C 45DEG RMLD W22	19587 D	NA	NA	427042

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
GRJ G138 3C 45DEG LMRD W10	19631 D	427049	NA	NA
GRJ G138 3C 45DEG RMLD W10	19631 D	427050	NA	NA
GRJ G138 3C 45DEG LMRD W16	19632 D	NA	427051	NA
GRJ G138 3C 45DEG RMLD W16	19632 D	NA	427052	NA
GRJ G138 3C 45DEG LMRD W22	19633 D	NA	NA	427053
GRJ G138 3C 45DEG RMLD W22	19633 D	NA	NA	427054

LMRD = Left Hand Merge/Right Hand Diverge
 RMLD = Right Hand Merge/Left Hand Diverge
 3C = 3" Centers
 45D = 45 Degree

Light Duty - 2.5 Channel - Vertical Gate

ITEM CLASS A 4 4 1

(F1) ROLLER R
(F2) LIMIT SWITCH N

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
VGR GASPR G138 3-0"W_ 2.5CH 3C	19959 D	427646	427649	427652
VGR GASPR G138 3-0 W_ 2.5CH 1.5C	19959 D	427655	427658	427661

ITEM CLASS A 4 4 7

(F1) ROLLER R
(F2) LIMIT SWITCH N

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
VGR GASPR G138 3-6 W_ 2.5CH 3C	19959 D	427647	427650	427653
VGR GASPR G138 3-6"W_ 2.5CH 1.5C	19959 D	427656	427659	427662

ITEM CLASS A 4 4 2

(F1) ROLLER R
(F2) LIMIT SWITCH N

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
VGR GASPR G138 4-0 W_ 2.5CH 3C	19959 D	427648	427651	427654
VGR GASPR G138 4-0 W_ 2.5CH 1.5C	19959 D	427657	427660	427663

GASPR = Spring
MAN = Manual
3C = 3" Centers

Light Duty - 2.5 Channel - Ball Caster Support Rails

ITEM CLASS A 6 1 2

The items listed below have no features and options.

DESCRIPTION	DWG. NO.	10" W	16" W	22" W
BCS 2.5CH CASTER ASSY 3C-__ SQ	15047 D	380221	380222	380223
BCS 2.5CH CASTER ASSY 4.5C-__ SQ	15047 D	380224	380225	380226
BCS 2.5CH CASTER ASSY 3C-__ ST	15047 D	380227	380228	380229
BCS 2.5CH CASTER ASSY 4.5C-__ ST	15047 D	380230	380231	380232

SQ = Square Pattern
 ST = Staggered Pattern

Medium Duty - 3.5 Channel - Straight

ITEM CLASS A 2 1 4

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRS 1.9 5-0 W__ 3.0" CTR	19505 D	427103	427104	427105	427106	427107
GRS 1.9 5-0 W__ 4.0" CTR	19505 D	427108	427109	427110	427111	427112
GRS 1.9 5-0 W__ 4.5" CTR	19505 D	427113	427114	427115	427116	427117
GRS 1.9 5-0 W__ 6.0" CTR	19505 D	427118	427119	427120	427121	427122

ITEM CLASS A 2 1 5

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRS 1.9 10-0 W__ 3.0" CTR	19566 D	427123	427124	427125	427126	427127
GRS 1.9 10-0 W__ 4.0" CTR	19566 D	427128	427129	427130	427131	427132
GRS 1.9 10-0 W__ 4.5" CTR	19566 D	427133	427134	427135	427136	427137
GRS 1.9 10-0 W__ 6.0" CTR	19566 D	427138	427139	427140	427141	427142

Medium Duty - 3.5 Channel - Curve - 2'-6" IR

ITEM CLASS A 2 2 5

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC 1.9 30DEG 3.5CH W__ 2-6IR	19506 D	427153	427154	427155	427156	427157

ITEM CLASS A 2 2 6

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC 1.9 45DEG 3.5CH W__ 2-6IR	19506 D	427158	427159	427160	427161	427162

ITEM CLASS A 2 2 7

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC 1.9 60DEG 3.5CH W__ 2-6IR	19506 D	427143	427144	427145	427146	427147

ITEM CLASS A 2 2 8

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC 1.9 90DEG 3.5CH W__ 2-6IR	19506 D	427148	427149	427150	427151	427152

Medium Duty - 3.5 Channel - Curve - 2'-6" IR
ITEM CLASS A 2 3 1

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC G254 30DEG 3.5CH W__ 2-6IR	19510 D	427293	427294	427295	427296	427297

ITEM CLASS A 2 3 2

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC G254 45DEG 3.5CH W__ 2-6IR	19511 D	427298	427299	427300	427301	427302

ITEM CLASS A 2 3 3

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC G254 60DEG 3.5CH W__ 2-6IR	19512 D	427303	427304	427305	427306	427307

ITEM CLASS A 2 3 4

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
GRC G254 90DEG 3.5CH W__ 2-6IR	19513 D	427308	427309	427310	427311	427312

Medium Duty - 3.5 Channel - Curve - True Taper

ITEM CLASS A 2 3 1

(F1) ROLLERS

DESCRIPTION	DWG. NO.	22" W 3'-4" IR	28" W 4'-0" IR	34" W 5'-0" IR	40" W 5'-0" IR
GRC G254 30DEG 3.5CH W__ 3.5 _-IR	19510 D	427313	427314	427315	427316

ITEM CLASS A 2 3 2

(F1) ROLLERS

DESCRIPTION	DWG. NO.	22" W 3'-4" IR	28" W 4'-0" IR	34" W 5'-0" IR	40" W 5'-0" IR
GRC G254 45DEG 3.5CH W__ 3.5 _-IR	19511 D	427317	427318	427319	427320

ITEM CLASS A 2 3 3

(F1) ROLLERS

DESCRIPTION	DWG. NO.	22" W 3'-4" IR	28" W 4'-0" IR	34" W 5'-0" IR	40" W 5'-0" IR
GRC G254 60DEG 3.5CH W__ 3.5 _-IR	19512 D	427321	427322	427323	427324

ITEM CLASS A 2 3 4

(F1) ROLLERS

DESCRIPTION	DWG. NO.	22" W 3'-4" IR	28" W 4'-0" IR	34" W 5'-0" IR	40" W 5'-0" IR
GRC G254 90DEG 3.5CH W__ 3.5 _-IR	19513 D	427325	427326	427327	427328

Medium Duty - 3.5 Channel - Junction Curve - True Taper

ITEM CLASS A 2 6 1

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W 2'-6" IR	22" W 3'-4" IR	28" W 4'-0" IR	34" W 5'-0" IR	40" W 5'-0" IR
GRJ G254 90DEG 3.5CH W__ RMLD	19514 D	427329	427330	427331	427332	427333
GRJ G254 90DEG 3.5CH W__ LMRD	19514 D	427334	427335	427336	427337	427338

Medium Duty - 3.5 Channel - Junction Straight

ITEM CLASS A 2 4 5

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W 5'-0" L	22" W 5'-0" L	28" W 5'-0" L	34" W 7'-6" L	40" W 7'-6" L
GRJ 1.9 30DEG W__ LMRD 3.5	19507 D	427163	427165	427167	427169	427171
GRJ 1.9 30DEG W__ RMLD 3.5	19507 D	427164	427166	427168	427170	427172

ITEM CLASS A 2 4 6

(F1) ROLLERS

DESCRIPTION	DWG. NO.	16" W 5'-0" L	22" W 5'-0" L	28" W 5'-0" L	34" W 7'-6" L	40" W 7'-6" L
GRJ 1.9 45DEG W__ LMRD 3.5	19508 D	427173	427175	427177	427179	427181
GRJ 1.9 45DEG W__ RMLD 3.5	19508 D	427174	427176	427178	427180	427182

LMRD = Left Hand Merge/Right Hand Diverge
 RMLD = Right Hand Merge/Left Hand Diverge
 L = Leg Length

Medium Duty - 3.5 Channel - Vertical Gate

ITEM CLASS A 4 4 4

(F1) ROLLER N
(F2) LIMIT SWITCH N

DESCRIPTION	DWG. NO.	15" W	21" W	27" W	33" W	39" W
VGW GASPR G196 3-0 W_	19871	427685	427615	427617	427619	427621
		16" W	22" W	28" W	34" W	40" W
		427686	427616	427618	427620	427622

ITEM CLASS A 4 4 8

(F1) ROLLER N
(F2) LIMIT SWITCH N

DESCRIPTION	DWG. NO.	15" W	21" W	27" W	33" W	39" W
VGW GASPR G196 3-6 W_	19871	427623	427625	427627	427629	427631
		16" W	22" W	28" W	34" W	40" W
		427624	427626	427628	427630	427632

ITEM CLASS A 4 4 5

(F1) ROLLER N
(F2) LIMIT SWITCH N

DESCRIPTION	DWG. NO.	15" W	21" W	27" W	33" W	39" W
VGW GASPR G196 4-0 W_	19871	427633	427635	427637	427639	427641
		16" W	22" W	28" W	34" W	40" W
		427634	427636	427638	427640	427642

	6.5	3.62	0
SUPPORT CONNECTOR CHANNEL SCC __	370167	370401	370161

GASPR = Gas Spring

Medium Duty - 3.5 Channel - Ball Caster Support Rails

ITEM CLASS A 6 2 2

The items listed below have no features and options.

DESCRIPTION	DWG. NO.	16" W	22" W	28" W	34" W	40" W
BCS 3.5CH CASTER ASSY 3C-__ SQ	19568 D	381481	381482	381483	381484	381485
BCS 3.5CH CASTER ASSY 4.5C-__ SQ	19568 D	381486	381487	381488	381489	381490
BCS 3.5CH CASTER ASSY 3C-__ ST	19568 D	381491	381492	381493	381494	381495
BCS 3.5CH CASTER ASSY 4.5C-__ ST	19568 D	381496	381497	381488	381489	381500

SQ = Square Pattern

ST = Staggered Pattern

2.5 Channel - Pallet Storage Rail

ITEM CLASS A 2 1 9

The items listed below have no features and options.

DESCRIPTION	DWG. NO.	2.4" C	4.8" C
PSR 190 10-0/6 __"C W/O STOPS	17814 D	429501	429502
PSR 190 10-0/6 __"C W/STOPS	17814 D	429503	429504

SQ = Square Pattern

ST = Staggered Pattern