



## PROVEN TRACK RECORD

Gramac Quartz Belt Bends have a proven track record of longevity and reliable operation around the globe in a variety of environments and industries including: post and parcel handling, airport baggage handling, warehouse and distribution centres, refrigerated storage units, print and packaging, laundries, cement, plaster and building materials, horticultural.

**Gramac Quartz** is the division of Amber Industries Ltd which has specialised for over 30 years in the manufacture of Belt Bends for many different combinations of load duty, arc and width formats.

## NEW DESIGN FEATURES – TS-TR150

Belt replacement is simpler, less time consuming whilst reducing manual handling risks with split top section. The split top section requires less physical exertion to open-up the side frame and guide rails and can be achieved with one engineer rather than two.

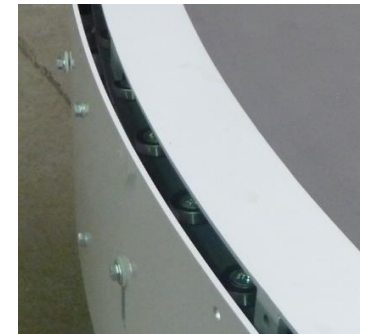
All the moving and wear parts are completely accessible and interchangeable.

Incorporation of 150mm viewing window

Quick release under guards

New tyred guide roller bearings fitted to the belt completely doing away with the need for the fabric wear strips which were previously bonded to the guide rails.

Bends can be supplied to meet all your requirements, Any angle, any width, any centre line radius, casing heights to suit, any GMU, any colour. Also available in stainless steel.



## KEY PRODUCT FEATURES

Friction Driven Belt Bends - quietly and smoothly changing the direction of conveyed products at high speed whilst maintaining the products spacing, orientation and alignment.

## ROBUST DESIGN

Patented design consists of a strong and rigid frame fabricated from steel section and plate rolled and formed to give the desired angle and radius. A stiffened smooth steel slide bed is mounted within the frame to support the belt and over which the belt slides.

## TAPERED END PULLEYS

Supported at each end of the curved frame by 'life greased' ball bearing units fixed to it are tapered conical pulleys manufactured in high density polypropylene on a steel shaft. These two pulleys can be adjusted in the horizontal plane by tensioning devices to provide the correct amount of tension in the belt which fits over them.

## MAXIMUM POWER TRANSMISSION

At one end the drive pulley is coated / lagged with a non-slip, highly wear resilient and heat resistant material which positively grips the underside of the belt. The taper of the pulley allows it to engage the belt across its full width, even at high speed, and ensures maximum power transmission from a suitably sized geared motor unit fitted to the shaft of the drive pulley. This method of driving the belt is known as 'Friction Driven'.

## POSITIVE BELT TRACKING

To Keep the belt running on the correct line Gramac Quartz Belt Bends use a method of positive tracking. The belts are supplied with roller bearings fitted to the reinforced outer edge of the belt which then run on guide rails built into the outer perimeter of the steel frame.

## FULLY GUARDED

All Gramac Quartz Belt Bends are supplied with safety guards fitted to eliminate trap points and prevent inadvertent access to moving parts such as the roller guide bearings. These guards are designed to be lightweight for easy removal for maintenance purposes.

## FRICITION DRIVE FOR MAXIMUM OPERATING LIFE / MINIMUM MAINTENANCE AND NOISE

All Gramac Quartz Belt Bends are Friction Driven which has three major advantages:

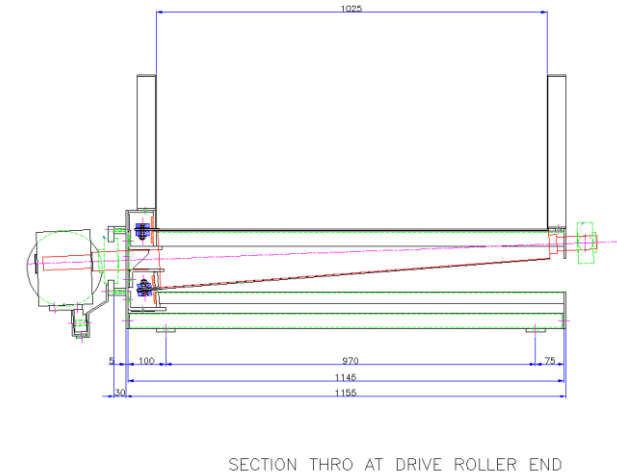
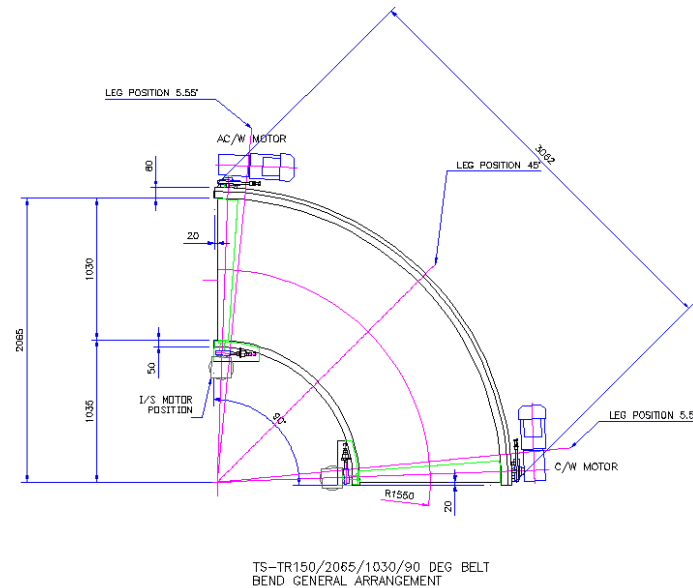
The tensile stresses in the belt are more evenly distributed across the width of the belt thus extending the life of the belt and avoiding stress concentrations causing tears.

Noise levels are kept to a minimum. The maximum running noise level for any Gramac Quartz Belt Bend is 65 dbA at 1000mm.

Maintenance requirements are very little and no added lubrication is required throughout the operating life of the belt bend. In summary Gramac Quartz Friction Driven Belt Bends offer much greater reliability at the lowest cost of ownership over time.

## MODEL REF: TS-TR150

Max Loading = 90kg/m measured along C/L  
 Top of Belt to underside frame = 270mm  
 Minimum pulley bearing L10 life = 50,000  
 GMU: SEW SA47 (E2, IP54) helical worm gear as std  
 Motor position: outside radius at discharge end as std  
 Running Noise level: Dba @ 1m = 65 Dba or less  
 Belt change time within 20 minutes  
 Belts positively tracked by roller bearings fitted to outer edge  
 Overall frame depth = 320mm  
 Max overhang of end of frame to pulley = 25mm  
 Tapered End Pulley Major Diameter = 150mm  
 Std = 400V, 3ph, 50Hz supply (no controls included)  
 Max Speed range (measured on C/L) = 2.5 M/s  
 Ambient temperature range: -15°C to + 55°C  
 High density Polypropylene Tapered End Pulleys  
 Robust & rigid fabricated mild steel frame



## SPECIFYING GQ BELT BENDS

There are three main dimensions which suffice to determine belt bend geometry. They are the subtended angle of the belt bend (A), the effective belt width (W) and the effective radius of the belt bend. The radius can be given as one of the following:  $R_o$  = the belt's effective outer radius,  $R_{cl}$  = centre line radius and  $R_i$  = the belt's effective inner radius. It is important to be clear about which one is being used. The nomenclature adopted by Gramac Quartz when designating its ranges of belt bend models uses the outer radius dimension, for example:

## MODEL DESIGNATION:

TR150	2065	1030	90
	$R_o$	W	A

## IN THIS CASE:

The effective outer radius of the belt,  $R_o$  = 2065mm

The effective belt width, W = 1030mm

The subtended angle of the belt bend, A = 90 degrees

**TR100** at the beginning of the model designation indicates the model range and in this instance stands for Tapered Roller with a max diameter of 100mm.

**Autocad footprint drawings of all our standard size belt bends can be supplied on request. Other special belt widths, radii and angles between 15° and 270° can be designed and manufactured to order to suit customers specific applications.**

## **OTHER KEY PARAMETERS AND OPTIONS THAT NEED TO BE SPECIFIED ARE:**

### **TRAVEL DIRECTION:**

clockwise or anti-clockwise.

### **TRAVEL SPEED:**

belt speed in M/sec measured at the centre line radius.

### **MOTOR POSITION:**

The preferred position for the geared motor is horizontally mounted on the outer radius at the discharge end of the belt bend conveyor. On some larger radius formats it is possible to vertically mount the geared motor on the inner radius.

### **MOTOR:**

Supplied with or without geared motor unit, SEW KA, PMM or Siemens.

### **BELT TYPE:**

Belts available from belt fabric manufacturers, including industrial grade, food safe (FDA approved) , wear resistant, chemical resistant, flame retardant and several different surface finishes including smooth top, lightly textured, high grip rough top, Available colours are usually black/dark grey, green, blue and white.

### **SUPPORTS:**

Our Bends can be supplied with 'H' type floor supports made from RHS, outriggers for low level positions, side mounted brackets for suspending from above using threaded rods or our engineers can design special supports to suit the situation. Floor supports can be fitted with either anti-vibration footpads with +/- 50mm adjustment or with locking wheels/castors if required to be mobile.

### **SIDEWALLS:**

Fabricated sheet steel sidewalls can be supplied to a max-height of 450mm (depending on bend footprint) above the top of belt.

### **COLOUR:**

Gramac Quartz house colour is RAL 5015 Blue, however our belt bends can be powder coated in any standard RAL colour.

	<b>Gramac TS-TR150/2065/1030</b>	<b>Other</b>
Anticipated Life Span	15 Years	15 Years
Design Options	Any Radius / Belt Width / Angle to suit clients requirements	Standard product range
Speeds	Max 4 m/s	Max 4 m/s
Weight Load	Max 150kg	Max 150kg
Features	Low noise, high speed and loads Easily maintainable Robust construction and reliable Proven technology Spiral options	Low noise, high speed and loads Easily maintainable Robust construction and reliable Proven technology Spiral options
Support	Designed, manufactured, serviced from Oldham UK	Imported, serviced from UK
Typical Delivery timescales	5-6 weeks	8-12 weeks
Spares Holding	UK	Unknown

<u>UK Airports:</u>	<u>BHS Integrator:</u>	<u>Year:</u>	<u>No. of Curves:</u>
London Heathrow T3, B139 & T4	G Robson, Logan & Alstec / Babcock	1996-2013	155
Gatwick BA TBF Building	Logan	1998-2000	44
Edinburgh	Logan	1998-2016	25
Glasgow	Fabricom	2003	16
Liverpool	G Robson	2000-2006	12
London Luton Birmingham Teesside Inverness Bournemouth Leeds/Bradford Belfast Newcastle Guernsey	G Robson  Logan  Alstec/Babcock	1996-2007	c.60
<u>Overseas Airports:</u>	<u>BHS Integrator:</u>	<u>Year:</u>	<u>No. of Curves:</u>
<u>Belgium:</u> Antwerp Brussels Ostend	Logan Teleflex	2013 2000-2015 2010	4 311 3
<u>Baltic States:</u> Tallin, Estonia Riga, Latvia	Logan Teleflex Logan Teleflex	2008 2011	15 12
<u>France:</u> Bordeaux Grenoble La Reunion Lille New Caledonia Nice T1 Tarbes Lourdes Pyrenees	Teleflex Teleflex Teleflex Teleflex Logan Teleflex Teleflex Teleflex	2003 2001 2001 2002 2011 2001 2001	8 4 2 5 2 10 14

<u>Overseas Airports:</u>	<u>BHS Integrator:</u>	<u>Year:</u>	<u>No. of Curves:</u>
<u>Greece &amp; Islands:</u> Alexandroupolis Anchialos Atkion Crete, Hania Crete, Heraklion Crete, Sitia Kalimos Kos Mykonos Rhodes Skiathos Zakinthos	Logan Teleflex Logan Teleflex Logan Fabricom Geo Robson Logan Teleflex Logan Teleflex Logan Logan Fabricom Logan Fabricom	2012 2010 2002 2004 2000 2014 2007 1999 2000 2005 2002 2006-7	2 2 2 8 5 4 4 2 2 6 2 14
<u>Hungary:</u> Budapest	Logan	2008	33
<u>Italy:</u> Bologna & Rimini	RHS Airport Systems Italia & Gudde Export Marketing	2007	10
<u>Malta:</u> Valetta	Logan Teleflex	2014	4
<u>Middle East &amp; Africa:</u> Casablanca, Morocco Doha, Qatar Jeddah, Saudi Arabia Medinah- Haj, Saudi Arabia Merowe, Sudan Khartoum, Sudan Sebha, Libya UAE	Logan Teleflex Logan Teleflex Logan Teleflex Logan Teleflex Logan Teleflex Logan Teleflex Logan Teleflex Logan Teleflex	2013 006-7 2007 2009 2008 2010 2012 2013	2 15 4 4 2 4 2 3
<u>Poland:</u> Krakow	Daifuku Logan	2015-16	36
<u>Russia:</u> Samara Sheremetyevo, Moscow Vladivostok	Daifuku Logan Logan Teleflex Logan Teleflex	2014 2008-09 2011	12 38 11
<u>South Africa:</u> Johannesburg, Tamb0	Logan Teleflex	2004-2011	49
<u>Ukraine:</u> Boryspil, Kiev	Logan Teleflex	2009	14