

**PATENTED TECHNOLOGY —**

# **Pack-RYT**

**Patent #: 6834862**

*The Pack-RYT system is a unique stuffing box sealing arrangement that for the first time incorporates a bearing and flush channel system together.*

*The advantages of this system are numerous and are listed below for easy reference:*

## ***Machined – in close – clearance bearing stabilizes shaft.***

- *Cavitation caused deflection is minimized.*
- *Minimal clearance sharply throttles solids, which allows the low-flush to keep them out of the shaft area.*
- *Flush – use reduction averages 2/3.*

## ***Fewer sealing rings required.***

- *As few as two rings of packing required.*
- *Results in minimal friction to sleeve / shaft.*
- *Little, or in some cases, no leakage from gland.*
- *Eliminates need to constantly adjust packing.*
- *High performance, ultra pure heat conductive sealing rings can virtually eliminate sleeve/shaft wear.*

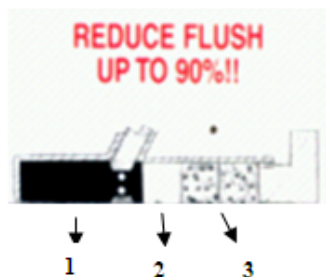
## ***High performance thermoplastic bearing block.***

- *The bearing material has a very high compressive strength.*
- *Is impervious to most chemicals.*
- *Virtually has no dimensional growth up to 260 Deg C.*
- *Split, pinned, drilled and tapped for easy installation and removal.*
- *Available as split bearing without lantern ring groove.*

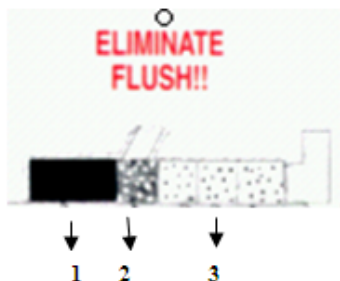
## ***Automatically positions flush channel correctly.***

- *Lantern ring cannot move past flush inlet.*
- *Flush flow remains constant.*

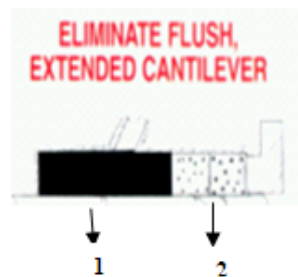
# Pack-RYT ENQUIRY DATA SHEET



1. Pack-RYT™ bearing/lantern ring minimizes run-out and deflection while throttling flush flow.
2. Style 317 blocks flush pressure on one side and heat conductive sealant on other.
3. Style 396C ultra-pure reinforced exfoliant seals off remaining leakage with minimal friction.



1. Pack-RYT™ bearing minimizes run-out and deflection.
2. Style 317 blocks heat conductive sealant.
3. Style 396C ultra-pure reinforced exfoliant seals with minimum friction, maximum heat conductivity.



1. Pack-RYT™ bearing minimizes run-out and deflection.
2. Style 396C ultra-pure reinforced exfoliant seals with minimum friction, maximum heat conductivity.

Please fill in all the details required below and either fax or email back to your local Klinger representative. Alternatively, directly to, Fax no: 08 9350 9286, attention customer services manager.

Shaft/Sleeve Mic. Diameter  mm

Bore Mic. Diameter  mm

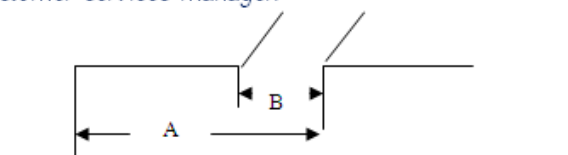
Stuffing Box Depth  mm

RPM  % Solids

Media

Media Pressure  kpa

Equip. Mfr.:



Stuffing Box Bottom to Outside Edge of Flush Hole (Dim "A")  mm

Diameter of Flush Hole (Dim. "B")  mm

Temperature  °C

Model #

Company name: \_\_\_\_\_

Customer's signature: \_\_\_\_\_ Date: \_\_\_\_\_

**PATENTED TECHNOLOGY —**

*The root cause of most rotating equipment failure is shaft movement. Seal Ryt's patented technology has proven its ability to seal, support shafts, and increase reliability.*

**Key Features of *Pack Ryt* Sealing Technology:****Shaft Stabilization**

*Equipment sealing reliability is derived directly from stabilizing shafts. The Pack Ryt sealing system brings shafts into concentricity and keeps them there, significantly increasing sealing reliability. Return on investment improvements with Pack Ryt sealing systems are realized with both difficult to seal and everyday sealing applications.*

*Examples of equipment types which present shaft movement that benefit from Pack Ryt sealing technology include:*

*Agitators - overhung shaft design*

*Vertical Pumps - Long shaft, little support*

*Split Case Horizontals - Middle shaft sag*

*Large, Slow equipment - Run-out, spiraling leakage as well as any equipment not running at its best efficiency point.*

**Water Conservation**

*Water in some cases may be plentiful outside the plant, quietly expensive inside. Whether the issue is the treatment of wastewater, evaporating water from the process, or water getting into bearings, the use of water must be sharply curtailed to reduce operating costs.*

*Use of the Pack Ryt sealing system guarantees a substantial reduction of flush water used. Due to very close clearances between bearing and sleeve, water entry to the process is severely throttled. This throttling is inherent and automatic.*

*Unlike conventional sealing bushings, Pack Ryt's do not require flow meters to reduce flow.*

*Below are typical maximum flow rates experienced on example pumps @ 15 psi differential, little or no leakage to atmosphere, without flow meter adjustment.*

*Goulds 3196MT- 0.147 gpm*

*Goulds 3175S - 0.837 gpm*

*Ahlstrom 2LRS15/20 - 1.074 gpm*

*Goulds 3175L - 1.252 gpm*

**Energy Conservation**

*Actual field tests routinely show that, after an approximate 10 -30 minute break in period, the Pack Ryt system draws the same or less amps than a single mechanical seal on the same or identical pump.*

— PACK RYT PATENT NUMBER 6834862

## ***PACK RYT BLR***

*Bearing with integral lantern ring and high quality braided packing for sealing applications where flush media (water, air, etc.) is available to the stuffing box*



— PACK RYT PATENT NUMBER 6834862

## ***PACK RYT BRG***

*Bearing and high quality braided packing for applications where flush media is not available to the stuffing box*



— PACK RYT PATENT NUMBER 6834862

## ***PACK RYT ORM***

*Bearing with O-ring mounted on outside diameter for use with mechanical seals to keep seal face concentric. Optional locking collar available.*



Physical properties, **PACK-RYT ( P.R.)** bearing versus Glass filled Teflon (GFT) and Carbon/molly filled Teflon (CMFT).

<u>PROPERTY</u>	<u>ASTM</u>	<u>UNITS</u>	<u>P.R.</u>	<u>GFT</u>	<u>CMFT</u>
Specific gravity	D1457-62	GR/CC	1.6	2.22	2.1
Tensile strength	D638	PSI	9,800	2,300	2,010
Elongation	D638	%	3	270	62
Flexural strength	D790	PSI	11,000	1,275	1,375
Flexural modulus	D790	10(-5)in/in(2)	1	1.9	1.6
Compressive strength	D695	PSI	22,000	1,460	975
Coef/therm/expansion	D696	10(-5)in/in(F)	2	6.4	5.4
Coef / friction	D1894-95	Static/kinetic	0.14	0.11	0.08
Hardness	Shore	D	85	62	60

*These properties are typical without regard for variances in compounding, manufacturer to manufacturer.*

## EXAMPLE CALCULATION **PACK-RYT** FLOW RATE

- *Shaft/Sleeve OD = 4"*
  - *Differential PSI = 15*
  - *Bearing width is 2" (length ahead of the flush hole)*
  
  - *Flow factor therefore = 0.31.*
  - *Bearing length factor = 0.700*
  
  - *GPM = Flow factor X Bearing Length Factor X Shaft/Sleeve OD*  
*= 0.31 x 0.700 x 4*  
*= 0.868 gallons per minute.*
- Or 0.868 x 3.7854 = 3.286 litres per minute.*

**IMPROVED RELIABILITY in thousands of APPLICATIONS WORLDWIDE****PULP & PAPER****Pumps***Thick Stock**Digester Liquor**Evaporator**Condensate**Stock**White Water**Medium Consistency**High Pressure Shower***Agitators***Dissolving Tank**Blow Tank**Stock Chest***Fiberline***Outlet Device**Top Separators**Steaming Vessels**High Pressure Feeders**Low Pressure Feeders**Chip Metering Screws**M&D Digester Equipment***Hydropulpers****WASTE WATER****Pumps***Digester Circulation**Thickened Sludge**Lift Station Vertical**Influent**Shower**Activated Sludge**Sewerage pumps***POWER****Pumps***Ash Sluice**Condensate**General Service Water**Cooling Water**Circulating Water**River Water**Feed Pumps***Soot Blowers****MINING****Pumps***Tails Booster**Autoclave**Crusher**De-watering***FOOD***Brewery Mash Cookers**Steam Peelers**Poultry By-products Pumps**Screw Conveyors***CHEMICAL***Dry Powder Mixers**Slurry Mixer/Agitator**Reactors*

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**OUTLET DEVICES TOP SEPERATORS STEAMING VESSELS**  
**HIGH PRESSURE FEEDERS LOW PRESSURE FEEDERS CHIP METERING SCREWS**

*As an OEM supplier of specific sealing devices to Andritz, Inc, The Seal Ryt Corporation routinely teams up with Andritz , Inc, to provide substantially upgraded sealing systems through Andritz engineering and their authorized rebuild facilities.*

## *Pack- RYT Installation Instructions*

- 1.Remove all old packing, lantern ring, etc. and thoroughly clean the shaft and stuffing box. Be sure no solids are present in the sealing area. Disconnect any discharge flush lines and plug the hole, leaving only the “ in “ line, so all flush goes only towards the bearing and the packing.*
- 2.Split the bearing and re-assemble over the shaft making sure the extraction holes are facing you as you slide the bearing in.*
- 3.If the bearing will not pilot, use a Porta-Power or other device to centre the shaft and then let it relax once you have installed all parts. If significant bore corrosion prevents installation, you may lightly and evenly sand the O.D. with fine crocus cloth.*
- 4.Make sure the bearing is fully seated in the bottom of the box. Taking depth measurements beforehand will let you know if you have accomplished this.*
- 5.Install each packing ring individually, staggering the joints.*
- 6.If the set contains all 396C, bring the gland follower to the packing and seat firmly. Do not over crush the packing. Then back off the nuts and let the packing relax for 10 to 15 minutes. Bring the nuts back up to the follower finger tight and you are ready to run.*
- 7.If the packing portion contains 317 or 7413, tamp each ring firmly during installation and tighten the follower nuts finger tight.*
- 8.If you are using the BLR configuration ( with a lantern ring groove ) turn the service water on full force before starting the pump. Ensure that there is controlled water leakage out of the gland during start up. The leak free process is achieved through gradual and controlled pulling up of the gland follower.*
- 9.Make packing adjustments no more than 2 flats on all nuts at a time. Wait a few minutes between adjustments.*

*If you encounter any difficulty accomplishing these steps or have any questions regarding installation or performance please contact the technical department of Klinger Limited Australia, on :+61 08 92511600.*

The **Pack-RYT** can be used on many applications and a few additional examples are:

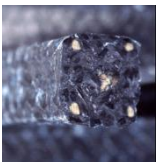
*Vacuum Pumps  
Screens  
Asphalt pumps  
Fry oils  
Glue / Starch pumps  
Fire water pumps  
Caustic pumps  
Ash pumps  
Mixed juice pumps  
Raw juice pumps  
Syrup pumps  
Dry powders  
Animal fat  
Slurry pumps  
Lime pumps  
Titanium Tetrachloride  
+ many more*

*Other exceptional products and custom designs  
available through **Klinger Limited Australia** from the  
**Seal Ryt Corporation***

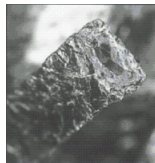


**SPECIALTY AND FDA/USDA COMPLIANT  
BEARING AND TEXTILE MATERIALS AVAILABLE**

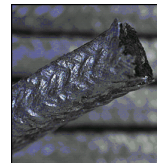
*Specialist compression and valve packing*



*Style 7413*



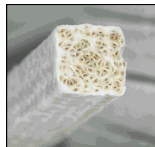
*Style 396*



*Style 390*



*Style 396C*



*Style 2000*



*Style 2001*