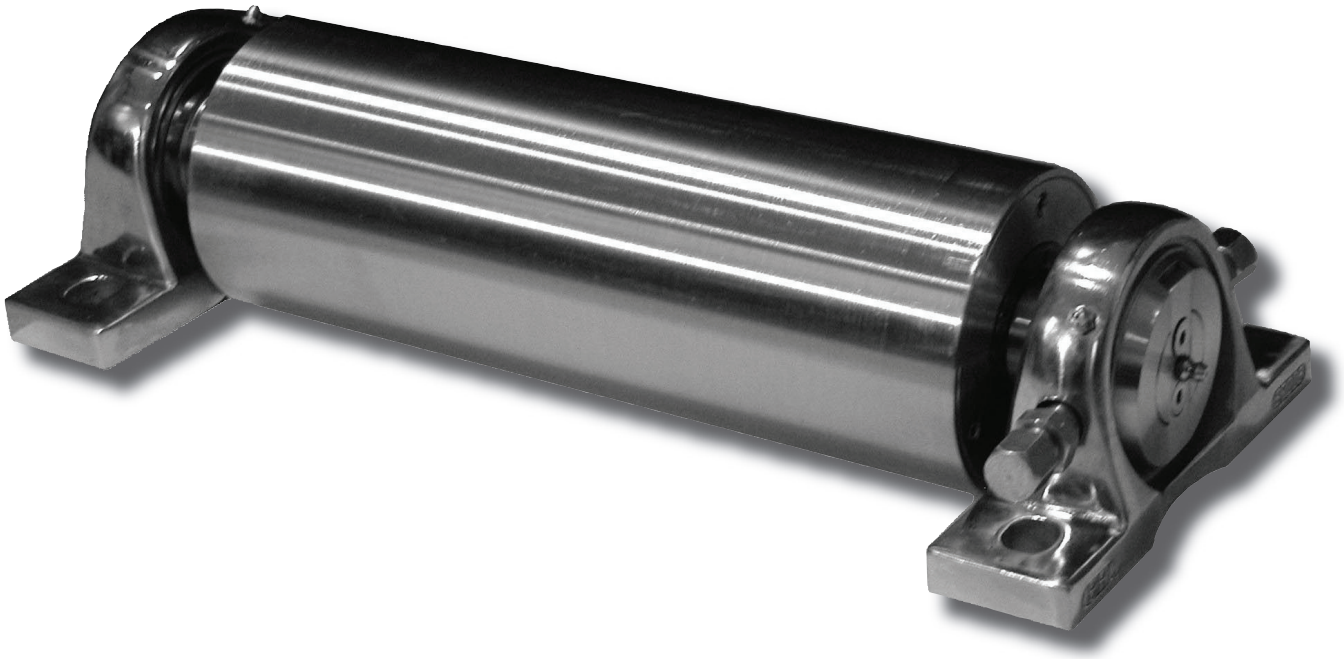
TECH-ROLL

HYDRAULIC MOTORIZED PULLEYS

™

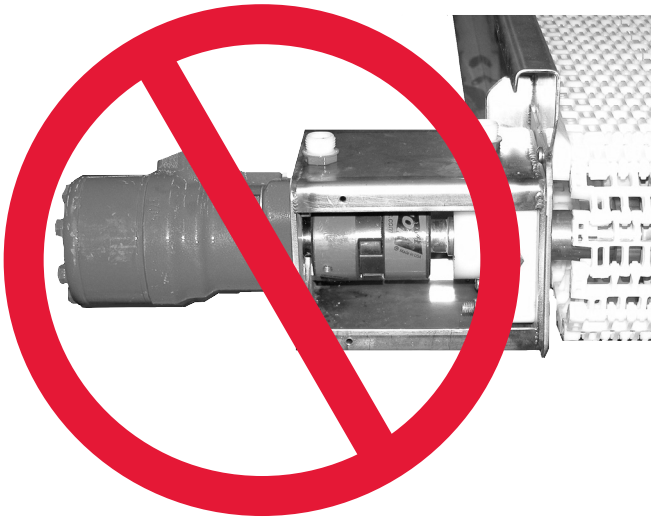
The Tech-Roll logo… A mark of quality and innovation.



THE SMART WAY

TO POWER YOUR CONVEYORS

SANITARY • SAFE • DURABLE • COMPACT • SIMPLE



TYPICAL OUTSIDE DRIVE

NO MORE external motor mounts

NO MORE chain drives

NO MORE expensive motor replacements

SAFE-No rotating parts to get caught in

The **Tech-Roll** is **HACCP & OSHA** friendly

TOUGH-Far outlasts other drives

The **TECH-ROLL** is sealed tightly and Precisioned for long wear

The TECH-ROLL SOLUTION

It just makes sense - put the hydraulic motor inside the drive roller. By relocating the motor this way, you gain precious space and protect the motor from damage and corrosion. Enclosing the hydraulic motor of the Tech-Roll also prevents oil leaks from contaminating food products or dripping on the floor where workers can slip and injure themselves. On a typical conveyor system, traditionally mounted hydraulic motors can protrude as much as 20 inches taking up valuable space. They require couplings or chain drives that often break or get in the way & can cause injuries.

All this is eliminated with the Tech-Roll. It's maintenance free, saves space, & is clean. Made of stainless steel, is HACCP friendly by eliminating potential contamination from hard to clean motors & chains. And with no external moving parts, it is safe, making it easy to comply with OSHA standards. The Tech-Roll is simple to install & maintain with only four screws to remove for disassembly, and existing drives can be replaced without conveyor modification. Substantial costs are saved through reduced maintenance & downtime, motor replacement & component longevity. Any Tech-Roll longer than 13" can accommodate motors from 5 cu in to 24 cu in by simply changing a spacer. The Tech-Roll is also available with a replaceable stub shaft on the live shaft end of the roller.

There are unlimited applications for the Tech-Roll. Some examples: Food processing & equipment, agricultural equipment & processing, lumber mills, sawmills, mining, materials handling, and mobile operations - everything from fishing vessels to gravel pits.

What does your entire outside drive really cost you - including labor & downtime? Tech-Roll saves through reduced motor replacements, maintenance & servicing, and reduced downtime.

TECH-ROLL COMPARISON

EXTERNAL DRIVE vs TECH-ROLL

EXTERNAL DRIVE

- ❑ Exposed motors subject to wash-downs with rust and flaking coatings as result
- ❑ Difficulties aligning motors with shafts resulting in oscillating motors with bearing and seal failures
- ❑ Chain guards damaged or left off exposing workers to possible injuries
- ❑ Flexible couplings wearing out and disintegrating, throwing parts on product
- ❑ Twisting conveyor frames because of overhung load or chain pull
- ❑ Need of oil drip catcher platform and pipe under motors or plastic bags over motors to prevent oil spills on product
- ❑ External motors can project out up to 20" and create dangers to workers
- ❑ External motors can catch and hide product particles creating contamination

TECH-ROLL

- ❑ Motor is totally protected inside the Tech-Roll
- ❑ The motor is perfectly aligned inside the Tech-Roll & the motor shaft is totally off-loaded
- ❑ There are no guards or moving parts other than the roller
- ❑ The Tech-Roll has no couplings
- ❑ With the Tech-Roll, the weight is centered between the conveyor frame for a balanced load
- ❑ The Tech-Roll has a transparent hose that will lead oil away from product zone in the unlikely event of an oil leak
- ❑ The Tech-Roll is flush with the conveyor frame
- ❑ The Tech-Roll has minimum parts to catch contamination

NOTE: The Tech-Roll is built with simplicity in mind and can be dismantled in a matter of minutes. All parts are commonly available so there is no need to send a Tech-Roll out for service. Premium components are used in the Tech-Roll – motors, bearings and seals. All manufactured parts are machined on CNC lathes and mills, resulting in consistent dimensions and quality.

TECH-ROLL DESIGN

The **TECH-ROLL** consists of two main parts:

1. The “shell” or cylindrical drum (body) over which the belt or chain is wrapped. The shell is open in one end and has an endplate with a centered shaft in the other end. The shaft in the endplate turns with the shell.

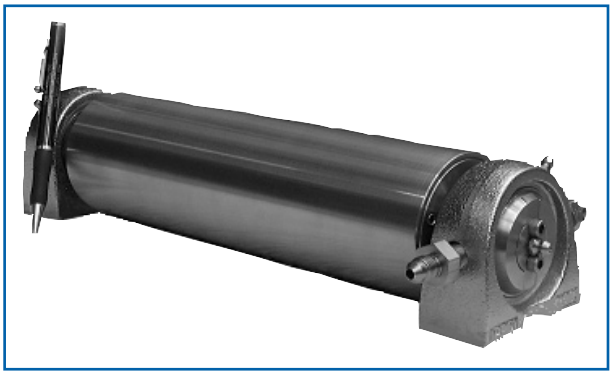
2. The “power unit” consists of a hydraulic motor rigidly mounted to a shaft and an endplate with a bearing assembly. The endplate turns around the shaft. The power unit is inserted into the open end of the shell. The splined motor shaft is received in a fixed flange inside the shell and the endplate with the bearing assembly closes the open end of the shell. The shell will turn around the motor-mount shaft, which is fixed relative to the rotation of the shell. Hydraulic fluid enters and exits the motor through galleries in the shaft. To simplify installation, the fixed shaft is supplied with a manifold housed in a standard flange or pillow-block style bearing housing.


SHELL


POWER UNIT

THERE ARE THREE BASIC DESIGNS OF THE TECH-ROLL, BASED ON SIZE AND POWER REQUIREMENT.

MINI: Starting with the smallest is the **Tech-Roll** “Mini”, with diameter of 2.8”, with a maximum motor displacement of 3 cu in. Shaft diameter of the Tech-Roll Mini is 1”. It comes supplied with 205 series stainless steel pillow block or flange bearings.



The **Tech-Roll** Mini is only 2.8” in diameter, but sports torque values up to 400 in lb and speeds up to 1000 rpm.

The Mini is built with the same simplicity as the larger **Tech-Rolls**, no gears or oil inside the roller, only a standard hydraulic motor. Minimum length of the Mini is 8.5”, with a 3 cu in displacement motor.

The small diameter makes it possible to use sprockets with a pitch diameter of as little as 5.4”, ideal for transfer points. The **Tech-Roll** Mini can be supplied with sprockets for all popular belt manufacturers such as Intralox®, KVP®, and Habasit Link®. The Mini is manufactured in stainless steel only, including stainless steel bearings.

STANDARD: Our standard **Tech-Roll** covers a broad range of motor sizes and configurations. It is available in diameters of 4.5”, 5.5”, 6.5”, 8.5”, and 10.5”, in both stainless steel and mild steel. Motor sizes from 5 cu in to 24 cu in are available. Shaft diameter is 1.5”. The standard bearing configuration is 208 series flange or pillow block bearings, but 207 and 206 series flange bearings are also available.

HEAVY DUTY: The heavy duty **Tech-Roll** is designed for especially demanding applications, with diameters of 8.5”, 10.5”, and 12.5” and motors with displacements up to 58.5 cu in. It can provide up to 10,000 in lbs of torque. Shaft diameter is 2.5” and it comes supplied with 213 series pillow block or flange bearings.

Custom rollers are available.

TECH-ROLL

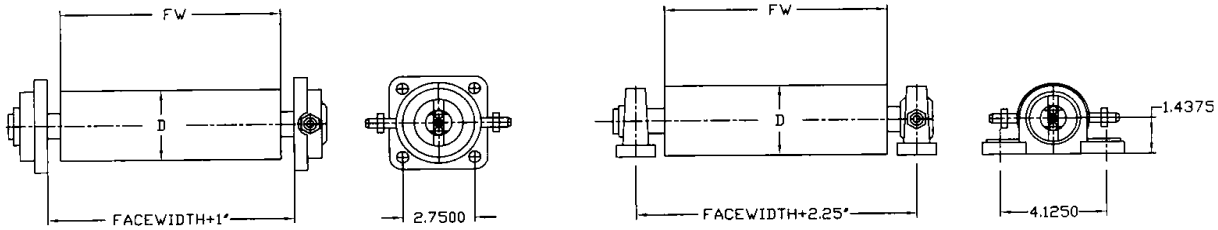
YOUR SOLUTION TO COSTLY MAINTENANCE

NOW WITH

ELECTRONIC SPEED CONTROL: The **Tech-Roll** is now available with an electronic speed control. An internal hall-effect sensor and a 30-magnet disc will provide a highly accurate electronic signal to a control board, which regulates the flow of oil to the motor via a proportional valve. This enables the **Tech-Roll** to maintain a constant speed regardless of starts and stops of other conveyors on line. It is also possible to use the controller for indexing with a high degree of repeatability. The control box can also be connected to a central computer for total line speed readout and control. The proportional valve and control board operate on a safe 12 VDC to eliminate risk of electric shock.

TECH-ROLL Mini
Dimensions and Pull Force

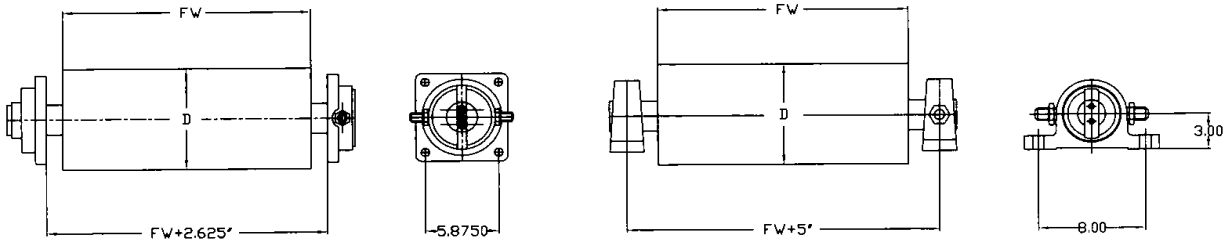
Shafts: 1" diameter, Motor: Danfoss OMM Series
Hydraulic connections - Male JIC #4 (1/4")



Hydraulic Pressure (psi)		**1000**	**n/a**	**n/a**
3 cu in motor Torque		400 in lb		
D = 2.8"	Belt pull (lb)	285		

TECH-ROLL Heavy Duty
Dimensions and Pull Force

Shafts: 2.5" diameter, Motor: Parker TG Series
Hydraulic connections - Male JIC #8 (1/2")

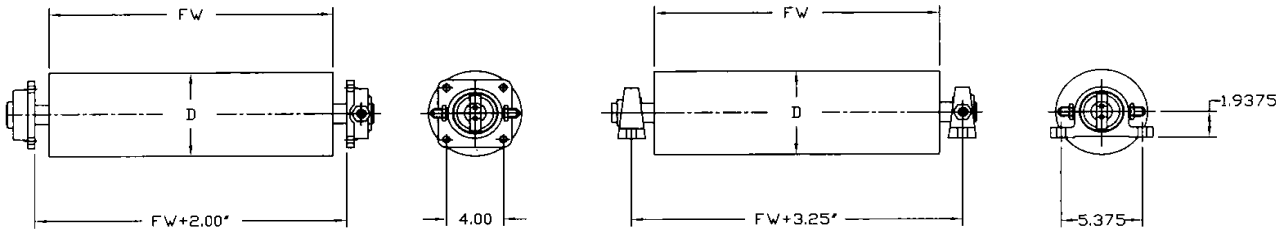


Hydraulic Pressure (psi)		**1000**	**1500**	**2000**
25 cu in motor Torque		3300 in lb	5000 in lb	7000 in lb
D = 8.5"	Belt pull (lb)	776	1176	1645
D = 10.5"	"	628	925	1333
D = 12.5"	"	528	800	1120
48 cu in motor Torque		6500 in lb	10,000 in lb	n/a
D = 8.5"	Belt pull (lb)	1530	2352	n/a
D = 10.5"	"	1238	1904	n/a
D = 12.5"	"	1040	1600	n/a

Above pull forces are calculated at outside diameter of the roller. Lagging & sprockets installed on the roller will reduce the pull force. To calculate pull force with sprockets, use pitch diameter as O.D. Given torque values are for average RPM.

TECH-ROLL Standard
Dimensions and Pull Force

Shafts: 1.5" diameter, Motor: Parker TE Series
Hydraulic connections - Male JIC #6 (3/8")

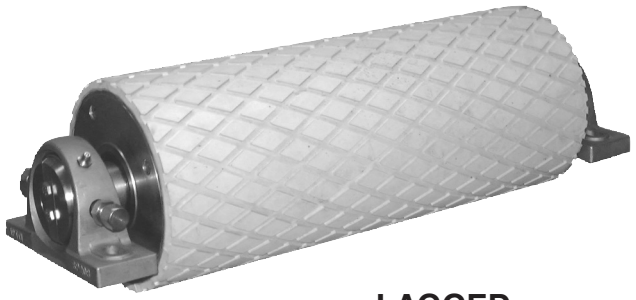


Hydraulic Pressure (psi)		1000	1500	2000
5 cu in motor Torque		575 in lb	975 in lb	1300 in lb
D = 4.5"	Belt pull (lb)	264	408	533
D = 6.5"	"	175	282	383
D = 8.5"	"	140	216	292
D = 10.5"	"	113	174	237
8 cu in motor Torque		1000 in lb	1500 in lb	2100 in lb
D = 4.5"	Belt pull (lb)	427	677	933
D = 6.5"	"	306	469	646
D = 8.5"	"	234	358	494
D = 10.5"	"	132	290	400
12 cu in motor Torque		1600 in lb	2400 in lb	3300 in lb
D = 4.5"	Belt pull (lb)	711	1093	1466
D = 6.5"	"	492	756	1015
D = 8.5"	"	376	578	776
D = 10.5"	"	304	468	628
16 cu in motor Torque		2000 in lb	3100 in lb	n/a
D = 4.5"	Belt pull (lb)	880	1300	n/a
D = 6.5"	"	750	1135	n/a
D = 8.5"	"	575	865	n/a
D = 10.5"	"	465	700	n/a
20 cu in motor Torque		2500 in lb	4000 in lb	n/a
D = 4.5"	Belt pull (lb)	1115	1777	n/a
D = 6.5"	"	771	1230	n/a
D = 8.5"	"	589	941	n/a
D = 10.5"	"	477	761	n/a
24 cu in motor Torque		3000 in lb	4500 in lb	n/a
D = 4.5"	Belt pull (lb)	1333	2044	n/a
D = 6.5"	"	923	1384	n/a
D = 8.5"	"	705	1058	n/a
D = 10.5"	"	571	857	n/a

Above pull forces are calculated at outside diameter of the roller. Lagging & sprockets installed on the roller will reduce the pull force. To calculate pull force with sprockets, use pitch diameter as O.D. Given torque values are for average RPM.

TECH-ROLL: THE HYDRAULIC MOTORIZED PULLEY

- SIMPLE — No internal gears or oil bath.
- SANITARY — Easy to clean, eliminating product contamination.
- VERSATILE — Same power rating in small and large diameters.
- SAFE — No rotating parts outside of roller.
- DURABLE — No chain drive or flexible couplings.
- FLEXIBLE — Can be used with sprockets or lagging; pillow block or flange bearings.
- PATENTED — The Tech-Roll is covered by multiple U.S. patents & foreign patents pending.

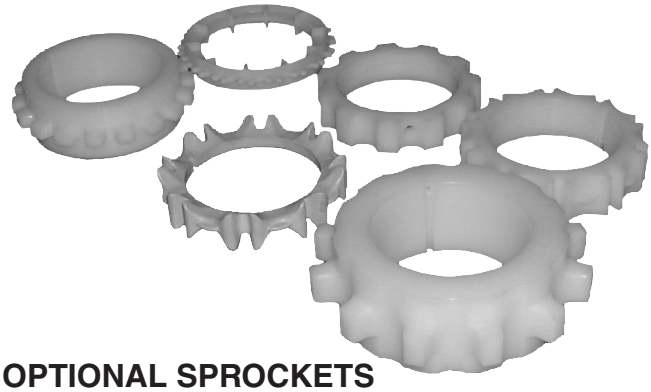


LAGGED

PLASTIC BELT SPROCKETS

SPECIFICATIONS

SHELL MATERIAL - steel or stainless
DIAMETERS - 2.8” to 12.5”
FACE WIDTHS - 8.5” to 70”
BEARING HOUSINGS - steel or stainless
BEARING INSERTS - steel or stainless
MOTOR SIZE - 3 cu in to 58.5 cu in
LAGGING - white food grade or black industrial grade diamond pattern rubber
SHAFT SIZE - 1” to 2.5” diameter
SPROCKETS FOR - plastic belt, plastic chain, roller chain, metal flat wire belt, wire mesh
KEY & KEYWAY
KNURLING



OPTIONAL SPROCKETS

Manufactured in the USA by:

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