

# FLUX DRIVE *SmartCOUPLING*<sup>™</sup>

FOR BELT-PULLEY APPLICATIONS

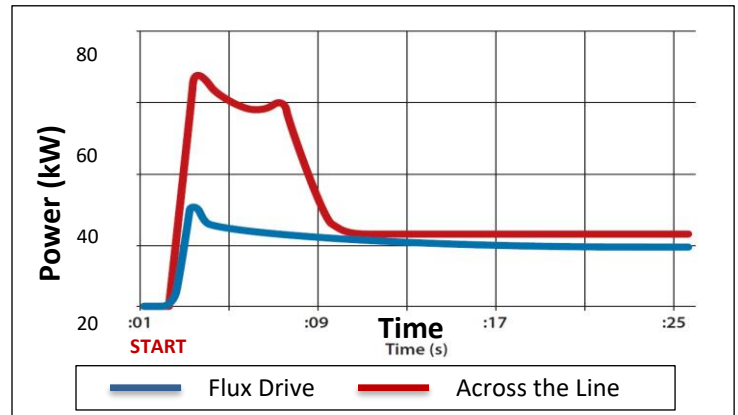


## Introducing the Flux Drive SmartCOUPLING<sup>™</sup> with an adjustable Belt-Pulley adapter

Flux Drive's patented SmartCOUPLING<sup>™</sup> technology has now been designed with an affordable and easy-to-install belt-pulley adapter (FSC-BP) – offering 'cushioned-start' and energy savings for belt driven loads.

## Cushioned Start

Designed as a slide-on replacement for existing motor pulleys, the FSC-BP provides a 100% mechanical cushioned start for fans/blowers and all other belt driven loads. The FSC-BP uses permanent magnets to transfer torque across the air gap by means of magnetic induction. Excessive torsional forces are nearly eliminated at start-up and during load seizures - reducing expensive downtime from belt failures. Locked-rotor current at start-up is also limited, reducing costly utility demand charges (kW).



## Energy Savings

For centrifugal applications such as most fans/blowers and belt driven pumps, the FSC-BP is also the only coupling device that provides long term energy savings (kWh) through load speed/flow reduction. SmartPOWER<sup>™</sup> air gap spacers can be easily inserted to decrease the magnetic coupling effect of the SmartCOUPLING<sup>™</sup>, giving operators the ability to extend cushioned-start duration and/or reduce the fixed operating speed by up to 50% on 1800rpm applications. Since the FSC-BP follows the Laws of Affinity on centrifugal system loads, trimming the load speed by just 10% could result in over 20% energy (kWh) savings!

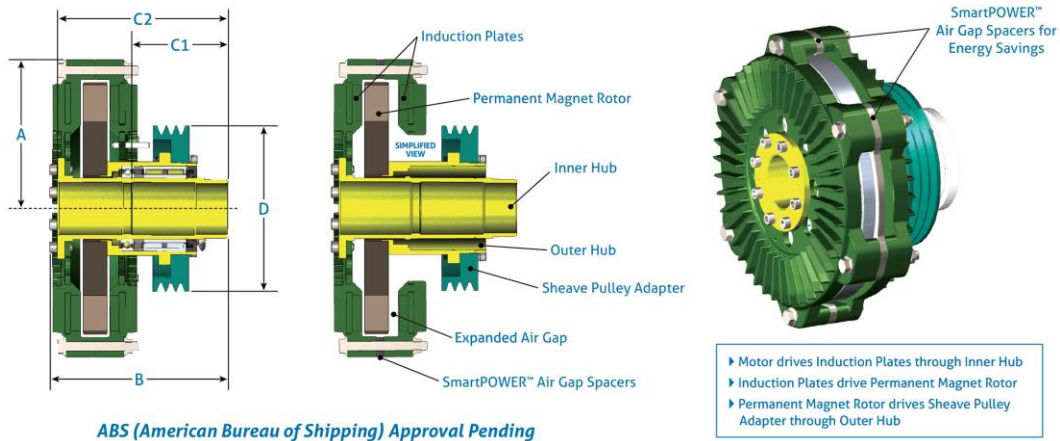


## Benefits

- Ability to reduce load speed and save energy with SmartPOWER<sup>™</sup> adjustment
- Zero torsional vibration transfer across the air gap extends the life of belts, bearings and other components
- Inherent cushioned-start and over-torque protection
- Lower motor and load operating temperatures due to reduced belt tension
- Reduces system noise
- Motor can be sized for the load
- Operates in harsh environments
- 100% mechanical SmartCOUPLING<sup>™</sup> adjustment feature
- Torque transfer that **Never Wears Out!**

## About Flux Drive

Tri-Tec Manufacturing designs and manufactures the permanent-magnetic Flux Drive SmartCOUPLING<sup>™</sup> and adjustable speed drives that increase the life and performance of rotating equipment. Flux Drives patented technology greatly lowers energy consumption and extends the life of motor driven systems. For more information about Flux Drive products, please visit [www.fluxdrive.com](http://www.fluxdrive.com).



ABS (American Bureau of Shipping) Approval Pending

### Flux Drive Belt-Pulley SmartCOUPLING™ Standard Dimensions

Model	Radius (A)		Overall length w/shrink disc (B)		Shaft Diameter Range (C)		Total Weight <sup>2</sup> (including shrink disc)	
	in	mm	in	mm	in	mm	lbs.	kg
FSC-1-BP	4.68	119	7.94	201	1.125 - 2.125	28.5-51	37	16.8
FSC-2-BP	6.21	158	8.00	203	1.375 - 2.125	35-51	50	22.7
FSC-3-BP	7.30	186	8.97	228	1.75 - 3.375	44.5 - 77.7	120	54.4
FSC-4-BP (all models)	8.55	217	8.97	228	1.875 - 3.375	47.6-77.7	140	63.5
FSC-5-BP (all models)	10.00	254	12.8	326	1.875 - 3.375	45.6 - 77.7	270	122.5

### Flux Drive Belt-Pulley SmartCOUPLING™ Sizing Table (60Hz Markets)

Model / Size	Operating Torque		Locked Rotor Torque (140%)		Horsepower/kW Rating <sup>1</sup>			
	Lb-ft	Nm	Lb-ft	Nm	@ 900 rpm	@ 1200 rpm	@ 1800 rpm	@ 3600 rpm
FSC-1-45-BP	45	61	63	85	2.5 - 7.5hp (1.9 - 5.5kW)	3.0 - 10hp (2.2 - 7.5kW)	5 - 15hp (3.7 - 11kW)	10 - 30hp (7.5 - 22kW)
FSC-2-120-BP	120	163	168	228	10 - 20hp (7.5 - 15kW)	15 - 25hp (11 - 18.5kW)	20 - 40hp (15 - 30kW)	40 - 75hp (30 - 55kW)
FSC-3-180-BP	180	244	252	342	25 - 30hp (18.5 - 22kW)	30 - 40hp (22 - 30kW)	50 - 60hp (37 - 45kW)	100 - 125hp (75 - 90kW)
FSC-4-300-BP	300	407	420	570	30 - 50hp (22 - 37kW)	40 - 60hp (30 - 45kW)	75 - 100hp (55 - 75kW)	150 - 200hp (112 - 150kW)
FSC-4-375-BP	375	508	525	712	50 - 60hp (37 - 45kW)	60 - 75hp (45 - 55kW)	100 - 125hp (75 - 90kW)	200 - 250hp (150 - 186kW)
FSC-5-450-BP	450	610	630	854	60 - 75hp (45 - 56kW)	75 - 100hp (55 - 75kW)	125 - 150hp (93 - 112kW)	250 - 300hp (186 - 224kW)
FSC-5-600-BP	600	813	840	1139	75 - 100hp (56 - 75kW)	100 - 125hp (75 - 93kW)	150 - 200hp (112 - 149kW)	300 - 400hp (224 - 298kW)
FSC-5-750-BP	750	1017	1050	1424	100 - 125hp (75 - 93kW)	125 - 150hp (93 - kW)	200 - 250hp (149 - 186kW)	300 - 500hp (224 - 373kW)

### Standard Pulley Types, Min. Outside Diameter & Number of Belts/Grooves

	3V Pulley			5V Pulley			A/B Pulley		
	Diameter (D) <sup>3</sup>		Max Grooves	Diameter (D) <sup>3</sup>		Max Grooves	Diameter (D) <sup>3</sup>		Max Grooves
	in	mm		in	mm		in	mm	
FSC-1-BP & FSC-2 BP	5.0	127	5	5.5	140	3	6.15	156	5
FSC-3-BP & FSC-4-BP	8.0	203	10	8.0	203	6	8.35	212	6
FSC-5-BP	11	279	10	11.25	286	6	11.5	292	6

**Note:** Tri-Tec provides the FSC-BP with a pulley to match the customer's existing pulley & belt type whenever possible. If the existing pulley type or size is not shown in the table at left, contact Tri-Tec for additional options.

**Notes:**

1. FSC selection should be based on measured load hp/kW, which may vary substantially from motor nameplate hp/kW.
2. Weights are estimated and may vary by up to 15% depending upon size of motor shaft bore and pulley sizes.
3. Value represents the O.D. of the smallest pulley size available for each FSC model. Flux Drive will match existing motor pulley type and size whenever possible. If existing motor pulley is smaller than the minimum size, a new load pulley may be required to maintain the overall pulley/speed ratio.
4. FSC-BP dimensions and sizing table are subject to change without notice. Check with Flux Drive at time of order for the latest product information.