

Falk™ Type A & AR parallel shaft gear drives can be equipped with an external backstop mounted at the second extension of the high speed shaft. **Note:** Where Type A and AR gear drives are equipped with external backstop at the high speed shaft, only one shaft driven cooling fan may be utilized.

External Backstops Sizes 10, 20, and 60

Specify the Falk™ self-contained external backstop to prevent reverse rotation or rollback of inclined belt conveyors, bucket elevators, fans, rotary pumps, kilns, or similar applications. The backstop can be mounted to permit clockwise or counter-clockwise rotation.

The external backstop is shipped from the Factory “ready for operation”. Backstop bearings are and sealed (shielded). External backstops also incorporate grease purge cavities outboard of the bearings. These cavities provide the means to protect against the ingress of taconite and other abrasive dusts. New grease is pumped into the grease purge cavities at appropriate intervals, purging contaminated grease with trapped abrasives, while providing a fresh barrier of clean grease.

When the backstop is shipped installed to a Falk™ drive, the grease purge cavities will be greased with NLGI #2 grease, unless otherwise specified. The option of adding grease to the grease purge cavities is up to the purchaser, however Rexnord recommends to obtain maximum protection the purge cavities be greased. Adding grease to the grease purge cavities is not recommended if the grease could contaminate the material being processed as in the food and drug industry. If the application is in the food or drug industry, the backstop should be ordered special lubricated complete with grease that meets USDA H-1 classification. When external backstops are shipped loose, as spares or similar, the purge cavities are not filled with grease.

External backstops are shipped with appropriate Installation & Maintenance Instructions. In particular, greasing procedures may vary depending on the specific size and type of external backstop. Read instructions fully before installing or maintaining the backstop. In the event Installation & Maintenance Instructions cannot be located, request new instructions from Rexnord, and be prepared to provide information shown on both the gear drive nameplate and the backstop nameplate to assure positive identification.

NOTE: For quadruple reduction (A4) drives, removal of backstop and mounting bracket may be required for adequate

clearance when installing foundation fasteners.

Falk™ external backstops are available ONLY as accessories on Falk™ drives, not as a separate item. The backstop is designed to operate during overrunning within a speed range of 400 to 1800 rpm. For continuous speeds less than 400 rpm or greater than 1800 rpm, refer the application to Rexnord. Also refer to Rexnord any creep drive applications where the backstop rpm is below 400 rpm. The backstop can operate successfully on slope mounted applications up to a maximum shaft axis tilt of $\pm 6^\circ$ from horizontal. Refer to Rexnord any applications where tilt exceeds this limit.

Design parameters permit up to five backstopping load applications in eight hours, with one minute or more in the overrunning direction between subsequent backstopping load applications. If backstopping operations are more frequent, or the time between backstopping operations is less than one minute, the backstop is classified as a working or indexing device and the application must be referred to Rexnord for selection.

WARNING: Do not use Falk™ backstops in tandem. Refer to Rexnord all applications involving the need for two or more backstops in one system. This applies to applications with two backstops on one shaft and applications in which backstops are mounted on the high speed shaft of each of the two drives that are separately powered, but drive a common shaft.

DO NOT use backstops for systems that are designed for the handling of people such as elevators, manlifts, ski tows, and ski lifts.

DO NOT use a backstop as a substitute for a brake.

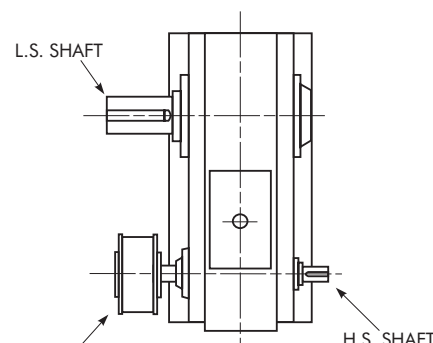
The backstop and normal associated equipment (shaft, pulleys, etc.) involve moving parts, therefore consult local, state, OSHA, and ANSI safety codes for proper guarding of rotating members and possible pinch points.

WARNING: Remove the load from the system before attempting to service the backstop, or any component in the system. Removing the load will reduce the possibility of an unexpected motion or reaction in the system.

External backstop selections indicated in Table 1, Page 2 of this manual are commensurate with ratios and torque ratings of Falk™ Type A & AR parallel shaft drives as shown in Falk™ Selection Guide 131-110. When the drive has less than unity service factor, check the actual load torque applied to the external backstop versus the external backstop torque ratings shown in Table 2, Page 4 of this manual. Refer to Rexnord if the above check reveals the torque rating of the pre-selected external backstop has been exceeded.

Typical Plan View of External Backstop

The overrunning direction of rotation is defined as clockwise or counterclockwise when facing the





Backstop Selection

HOW TO USE TABLE 1 — Table 1 lists backstop selections for Type A & AR parallel shaft drives. Except where noted, backstops are selected to equal or exceed maximum drive ratings at 1750 through 580 rpm. Refer to Rexnord for backstop selections for Sizes 545 and larger. For selection and availability for all other conditions, refer specific application details to Rexnord.

When the gear drive has less than unity service factor, check the actual load torque applied to the backstop versus the backstop torque ratings shown in Table 2, Page 4 of this manual. Refer to Rexnord if the above check reveals the torque rating of the pre-selected backstop has been exceeded.

TABLE 1 — Backstop Selections – Sizes 305 thru 525 (Continued on Page 3)

Nominal Ratios	Single Reduction											
	305	325	345	365	385	405	425	445	465	485	505	525
1.84			60									
2.03			60									
2.25			60									
2.49			60									
2.76			60									
3.05			60									
3.38			60									
3.74			60	60								
4.13	20		60	60								
4.57	20		60	60								
5.06	20	20	60	60								
5.60	20	20	60	60								
	Double Reduction											
5.60					60							
6.20	10				60	60						
6.86	10				60	60						
7.59	10				60	60						
8.40	10		20		60	60						
9.30	10		20		60	60	60					
10.29	10		20		60	60	60					
11.39	10	10	20	20	60	60	60					
12.61	10	10	20	20	60	60	60					
13.95	10	10	20	20	60	60	60					
15.44	10	10	20	20	60	60	60	60				
17.09	10	10	20	20	60	60	60	60				
18.91	10	10	20	20	60	60	60	60				
20.93	10	10	20	20	60	60	60	60				
23.16	10	10	20	20		60	60	60				
25.63	10	10	20	20		60	60	60				
28.36	10	10	20	20								
31.39	10	10	20	20								
34.74	10	10	20	20								

☐ Drive rating exceeds backstop rating or bore capacity.

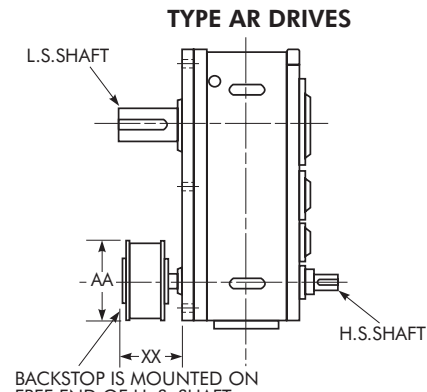
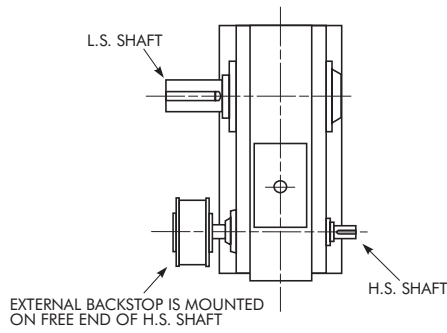
TABLE 1 — Backstop Selections – Sizes 305 thru 525 (Continued from Page 2)

Nominal Ratios	Triple Reduction											
	305	325	345	365	385	405	425	445	465	485	505	525
23.16					20	20	20 (★)	60	60			
25.63					20	20	20	60	60			
28.36					20	20	20	60	60			
31.39					20	20	20	60	60			
34.74					20	20	20	60	60	60		
38.44	10	10	10	10	20	20	20	60	60	60		
42.54	10	10	10	10	20	20	20	60	60	60		
47.08	10	10	10	10	20	20	20	60	60	60	60	
52.11	10	10	10	10	20	20	20	60	60	60	60	
57.66	10	10	10	10	20	20	20	60	60	60	60	
63.82	10	10	10	10	20	20	20	60	60	60	60	
70.62	10	10	10	10	20	20	20	60	60	60	60	
78.16	10	10	10	10	20	20	20	60	60	60	60	
86.50	10	10	10	10	20	20	20	60	60	60	60	
95.73	10	10	10	10	20	20	20	60	60	60	60	
105.9	10	10	10	10		20	20	60	60	60	60	
117.2	10	10	10	10								
129.7	10	10	10	10								
143.6	10	10	10	10								
158.9	10	10	10	10								
175.9	10	10	10	10								
194.6	10	10	10	10								
215.4	10	10	10	10								

Quadruple Reduction												
105.9					10							
117.2					10	10	10	20	20	60	60	60
129.7					10	10	10	20	20	60	60	60
143.6					10	10	10	20	20	60	60	60
158.9					10	10	10	20	20	60	60	60
175.9					10	10	10	20	20	60	60	60
194.6					10	10	10	20	20	60	60	60
215.4					10	10	10	20	20	60	60	60
238.4					10	10	10	20	20	60	60	60
263.8					10	10	10	20	20	60	60	60
291.9					10	10	10	20	20	60	60	60
323.1					10	10	10	20	20	60	60	60
357.5					10	10	10	20	20	60	60	60
395.7					10	10	10	20	20	60	60	60
437.9					10	10	10	20	20	60	60	60

★ Gear drive rating exceeds Size 20 backstop rating. The Size 20 backstop may be used only if required H.S. Shaft torque is less than 13,800 lb-in.

☐ Drive rating exceeds backstop rating or bore capacity.



The overrunning direction of rotation is defined as clockwise or counterclockwise when facing the rotating end of the low speed shaft.

TABLE 2 — Backstop Data

Backstop Size	AA Inches	RPM		Torque lb-in	Bore/Inches		Equivalent HP @ Input RPM ■					WR ² lb-in ²	Weight lb
		Min	Max		Min	Max	1750	1170	870	720	580		
10	7.25	400	1800†	6492	.750	1.625	180	121	90	74	60	5.1	24
20	10.25	400	1800†	13860	1.687	2.125	385	258	191	158	128	31.6	80
60	13.00	400	1800	40320	2.187	3.750	1120	748	556	461	371	148	130

† Higher speeds may be obtained with special balancing and these applications must be referred to Rexnord.
 ■ Interpolate for intermediate speeds.

TABLE 3 — Type A Drive Dimension YY – Inches

Backstop Size	DRIVE SIZE											
	305	325	345	365	385	405	425	445	465	485	505	525
Single Reduction — Type A1												
10	12.31	12.87										
60	....	....	14.50	15.37	....						
Double Reduction – Type A2												
10	11.00	11.37										
20	....	....	13.31	14.25								
60	....	....	....	....	16.20	16.90	17.80	19.60				
Triple Reduction – Type A3												
10	10.81	11.18	11.81	12.56								
20	....	....	....	....	14.90	15.80	16.70					
60	....	....	....	....	....	....	....	18.70	19.40	20.40	22.60	
Quadruple Reduction – Type A4												
10	....	....	....	....	13.50	14.20	15.10					
20	....	....	....	....	....	....	....	17.50	18.40			
60	....	....	....	....	....	....	....	....	....	20.40	21.60	22.70

TABLE 4 — Type AR Drive Dimension XX – Inches

Backstop Size	DRIVE SIZE				
	405	425	445	465	485
Double Reduction – Type AR2					
60	7.05	7.12	7.30	...	...
Triple Reduction – Type AR3					
20	6.00	6.03			
60	...	...	7.30	7.34	6.71
Quadruple Reduction – Type AR4					
10	4.46	4.43			
20	...	...	5.74	5.71	...
60	...	...	...	...	6.71