

Accessory Belt Drive Packages

INTRODUCTION

Proper belt alignment is essential for troublefree operation of belt-driven compressors. These instructions cover the accessory belt drive package, and should be used in conjunction with separate Compressor and Condenser Installation Instructions.

Refer to Table 1 for drive package components for the 5F,H standard belt drive packages. Table 2 and Fig. 1 list the data for the flywheel used in each of these packages.

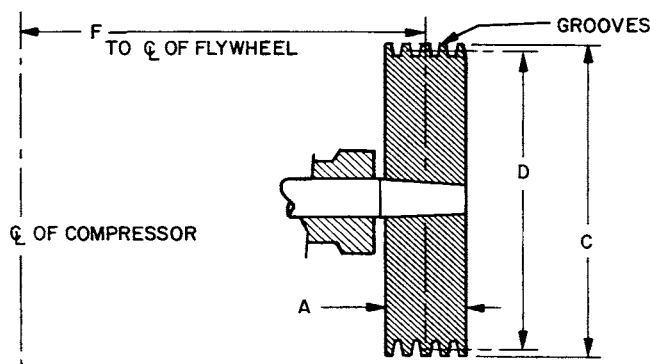


Fig. 1 — Flywheel

INSTALLATION

Install and Align Belt Drive — Clean motor and compressor shafts, and the flywheel and motor pulley bores with fine emery cloth. Then install motor pulley, flywheel and keys tightly on shafts.

Slide the motor on rails toward the compressor to install belt. Line up flywheel and motor pulley with a straight edge (Fig. 2), string or by placing a round rod in the belt grooves. Slide the motor pulley on the shaft to correct any parallel misalignment. To correct any angular misalignment, loosen the motor holddown bolts and turn motor frame as required.

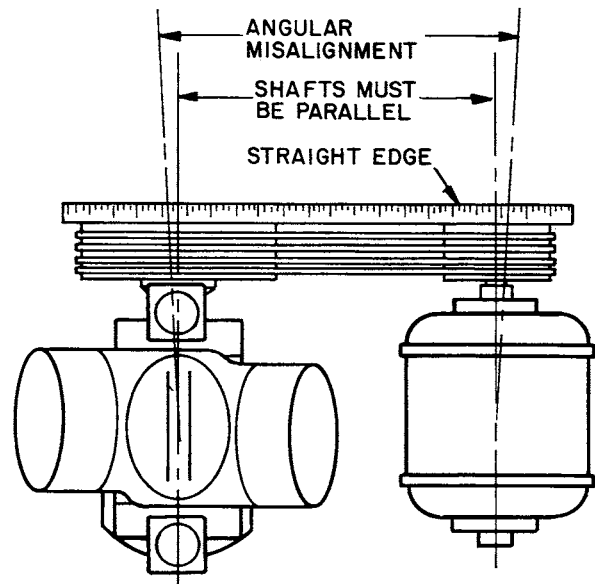


Fig. 2 — Correct Belt Alignment

When alignment is completed, move the motor away from the compressor with adjusting screws to tighten the belts. Tighten belts just enough to prevent slippage. Belt tension can be checked by one of the following methods:

1. Loosen belts until they slip (belt squeals) when motor starts; then tighten enough to eliminate slippage. *Observe Warning below.* OR
2. Check the amount of deflection when belt is depressed at the center of the span. Heavier belts deflect approximately one in. for a 24-in. span; lighter belts or longer span deflect proportionately more.

⚠ WARNING

Do not operate motor and compressor without belt or coupling guard in place. Serious injury can result from contact with moving parts.

Table 1 — Belt Drive Packages (60-Hertz, 1750 Rpm Motors)

DRIVE PACKAGE PART NUMBER	COMPR SIZE	HP	FRAME	SHAFT DIAM (in.)	COMPR RPM	CENTER TO CENTER (in.)	FLYWHEEL			PULLEY			BELTS		
							Pkg No.	PD	No. of Grooves & Type	Pkg No.	PD	No. of Grooves & Type	Pkg No.	PL	No. of Belts
5F20-A181	5F20	3	182T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-861	7.4	2-B	5F20-851	61.8	2-B
5F20-A181	5F20	5	184T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-861	7.4	2-B	5F20-851	61.8	2-B
5F20-A181	5F30	5	184T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-861	7.4	2-B	5F20-851	61.8	2-B
5F20-A191	5F20	3	182T	1½	1450	20.2	5F20-394	7.5	2-B	5F20-881	6.2	2-B	5F20-851	61.8	2-B
5F20-A191	5F30	5	184T	1½	1450	20.2	5F20-394	7.5	2-B	5F20-881	6.2	2-B	5F20-851	61.8	2-B
5F20-A201	5F20	7.5	213T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-891	7.4	2-B	5F20-851	61.8	2-B
5F20-A201	5F20	10	215T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-891	7.4	2-B	5F20-851	61.8	2-B
5F20-A201	5F30	7.5	213T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-891	7.4	2-B	5F20-851	61.8	2-B
5F20-A201	5F30	10	215T	1½	1750	19.3	5F20-394	7.5	2-B	5F20-891	7.4	2-B	5F20-851	61.8	2-B
5F20-A211	5F20	7.5	213T	1½	1450	20.2	5F20-394	7.5	2-B	5F20-901	6.2	2-B	5F20-851	61.8	2-B
5F20-A211	5F30	7.5	213T	1½	1450	20.2	5F20-394	7.5	2-B	5F20-901	6.2	2-B	5F20-851	61.8	2-B
5F20-A211	5F30	10	215T	1½	1450	20.2	5F20-394	7.5	2-B	5F20-901	6.2	2-B	5F20-851	61.8	2-B
5F30-A201	5F30	15	254T	1½	1750	19.3	5F30-394	7.5	3-B	5F30-921	7.4	3-B	5F30-831	61.8	3-B
5F40-A181	5F40	7.5	213T	1½	1750	26.6	5F40-394	9.5	3-B	5F30-881	9.4	3-B	5F40-841	82.8	3-B
5F40-A181	5F40	10	215T	1½	1750	26.6	5F40-394	9.5	3-B	5F30-881	9.4	3-B	5F40-841	82.8	3-B
5F40-A181	5F60	10	215T	1½	1750	26.6	5F40-394	9.5	3-B	5F30-881	9.4	3-B	5F40-841	82.8	3-B
5F40-A191	5F40	7.5	213T	1½	1450	25.5	5F40-394	9.5	3-B	5F30-891	8.0	3-B	5F30-841	79.8	3-B
5F40-A191	5F40	10	215T	1½	1450	25.5	5F40-394	9.5	3-B	5F30-891	8.0	3-B	5F30-841	79.8	3-B
5F40-A191	5F60	10	215T	1½	1450	25.5	5F40-394	9.5	3-B	5F30-891	8.0	3-B	5F30-841	79.8	3-B
5F40-A201	5F40	15	254T	1½	1750	26.6	5F40-394	9.5	3-B	5F40-871	9.4	3-B	5F40-841	82.8	3-B
5F40-A201	5F60	15	254T	1½	1750	26.6	5F40-394	9.5	3-B	5F40-871	9.4	3-B	5F40-841	82.8	3-B
5F40-A201	5F60	20	256T	1½	1750	26.6	5F40-394	9.5	3-B	5F40-871	9.4	3-B	5F40-841	82.8	3-B
5F40-A211	5F40	15	254T	1½	1450	25.5	5F40-394	9.5	3-B	5F30-901	8.0	3-B	5F30-841	79.8	3-B
5F40-A211	5F60	15	254T	1½	1450	25.5	5F40-394	9.5	3-B	5F30-901	8.0	3-B	5F30-841	79.8	3-B
5F40-A211	5F60	20	256T	1½	1450	25.5	5F40-394	9.5	3-B	5F30-901	8.0	3-B	5F30-841	79.8	3-B
5F60-A191	5F60	25	284T	1½	1750	26.6	5F40-394	9.5	3-B	5F40-881	9.4	3-B	5F40-841	82.8	3-B
5F60-A211	5F60	25	284T	1½	1450	25.5	5F40-394	9.5	3-B	5F40-891	8.0	3-B	5F30-841	79.8	3-B
5H40-911	5H40	20	256T	1½	1750	32.2	5H40-394	11.0	3-C	5H40-811	11.0	3-C	5H40-861	92.9	3-C
5H40-921	5H40	20	256T	1½	1450	30.7	5H40-394	11.0	3-C	5H60-811	9.0	3-C	5H60-861	92.9	3-C
5H40-931	5H40	25	284T	1½	1750	32.2	5H40-394	11.0	3-C	5H80-811	11.0	3-C	5H40-861	98.9	3-C
5H40-931	5H40	30	286T	1½	1750	32.2	5H40-394	11.0	3-C	5H80-811	11.0	3-C	5H40-861	98.9	3-C
5H40-931	5H60	30	286T	1½	1750	32.2	5H40-394	11.0	3-C	5H80-811	11.0	3-C	5H40-861	98.9	3-C
5H40-941	5H40	25	284T	1½	1450	30.7	5H40-394	11.0	3-C	5H120-811	9.0	3-C	5H60-861	92.9	3-C
5H40-941	5H40	30	286T	1½	1450	30.7	5H40-394	11.0	3-C	5H120-811	9.0	3-C	5H60-861	92.9	3-C
5H40-941	5H60	30	286T	1½	1450	30.7	5H40-394	11.0	3-C	5H120-811	9.0	3-C	5H60-861	92.9	3-C
5H40-951	5H40	40	324T	2½	1750	32.2	5H40-394	11.0	3-C	5H40-821	11.0	3-C	5H40-861	98.9	3-C
5H40-951	5H40	50	326T	2½	1750	32.2	5H40-394	11.0	3-C	5H40-821	11.0	3-C	5H40-861	98.9	3-C
5H40-951	5H60	40	324T	2½	1750	32.2	5H40-394	11.0	3-C	5H40-821	11.0	3-C	5H40-861	98.9	3-C
5H40-961	5H40	40	324T	2½	1450	30.7	5H60-394	11.0	5-C	5H60-821	9.0	5-C	5H80-861	92.9	5-C
5H40-961	5H40	50	326T	2½	1450	30.7	5H60-394	11.0	5-C	5H60-821	9.0	5-C	5H80-861	92.9	5-C
5H40-961	5H60	40	324T	2½	1450	30.7	5H60-394	11.0	5-C	5H60-821	9.0	5-C	5H80-861	92.9	5-C
5H40-961	5H60	50	326T	2½	1450	30.7	5H60-394	11.0	5-C	5H60-821	9.0	5-C	5H80-861	92.9	5-C
5H60-921	5H60	50	326T	2½	1750	32.2	5H60-394	11.0	5-C	5H80-821	11.0	5-C	5H120-861	98.9	5-C
5H60-931	5H80	60	364T	2½	1750	36.7	5H60-394	11.0	5-C	5H120-821	11.0	5-C	5H40-871	107.9	5-C
5H60-931	5H80	75	365T	2½	1750	36.7	5H60-394	11.0	5-C	5H120-821	11.0	5-C	5H40-871	107.9	5-C
5H60-931	5H120	60	364T	2½	1750	36.7	5H60-394	11.0	5-C	5H120-821	11.0	5-C	5H40-871	107.9	5-C
5H60-931	5H120	75	365T	2½	1750	36.7	5H60-394	11.0	5-C	5H120-821	11.0	5-C	5H40-871	107.9	5-C
5H60-941	5H60	60	364T	2½	1750	32.2	5H60-394	11.0	5-C	5H120-821	11.0	5-C	5H120-861	98.9	5-C
5H60-941	5H60	75	365T	2½	1750	32.2	5H60-394	11.0	5-C	5H120-821	11.0	5-C	5H120-861	98.9	5-C
5H60-951	5H60	60	365T	2½	1450	32.2	5H60-394	11.0	5-C	5H60-831	9.0	5-C	5H80-861	92.9	5-C
5H60-951	5H60	75	365T	2½	1450	32.2	5H60-394	11.0	5-C	5H60-831	9.0	5-C	5H80-861	92.9	5-C
5H80-911	5H80	40	324T	2½	1750	36.7	5H60-394	11.0	5-C	5H80-821	11.0	5-C	5H40-871	107.9	5-C
5H80-911	5H80	50	326T	2½	1750	36.7	5H60-394	11.0	5-C	5H80-821	11.0	5-C	5H40-871	107.9	5-C
5H80-921	5H80	40	324T	2½	1450	38.2	5H60-394	11.0	5-C	5H60-821	9.0	5-C	5H40-871	107.9	5-C
5H80-921	5H80	50	326T	2½	1450	38.2	5H60-394	11.0	5-C	5H60-821	9.0	5-C	5H40-871	107.9	5-C
5H80-931	5H80	60	364T	2½	1450	38.2	5H60-394	11.0	5-C	5H60-831	9.0	5-C	5H40-871	107.9	5-C
5H80-931	5H120	60	364T	2½	1450	38.2	5H60-394	11.0	5-C	5H60-831	9.0	5-C	5H40-871	107.9	5-C
5H80-941	5H80	75	365T	2½	1450	38.2	5H80-394	11.0	6-C	5H80-831	9.0	6-C	5H80-871	107.9	6-C
5H120-941	5H120	75	365T	2½	1450	38.2	5H120-394	11.0	6-C	5H80-831	9.0	6-C	5H80-871	107.9	6-C
5H80-951	5H80	100	404T	2½	1750	36.7	5H120-394	11.0	9-C	5H120-831	11.0	9-C	5H120-871	107.9	9-C
5H80-951	5H120	100	404T	2½	1750	36.7	5H120-394	11.0	9-C	5H120-831	11.0	9-C	5H120-871	107.9	9-C
5H120-911	5H120	100	404T	2½	1450	38.2	5H120-394	11.0	9-C	5H40-841	9.0	9-C	5H120-871	107.9	9-C

PD — Pitch Diameter (in.)
 PL — Pitch Length (in.)

Table 2 — Compressor Flywheel Data

COMPR MODEL	FLYWHEEL							
	Package Number	Model Number	Dimensions (in.)					WR ² (lbs-in. ²)
			Width A	O.D. C	Pitch Diameter D	Grooves No.-Type	From $\text{\textcircled{C}}$ of Compressor F	
5F20	5F20-394	5F20-1053	1¾	8.0	7.5	2-B	7¼	105
5F30	5F20-394	5F20-1053	1¾	8.0	7.5	2-B	8 ⁷ / ₁₆	105
	5F30-394	5F30-1053	2½	8.0	7.5	3-B	8 ³ / ₁₆	134
5F40	5F40-394	5F40-1054	2½	10.0	9.5	3-B	10 ¹ / ₁₆	297
5F60	5F40-394	5F40-1054	2½	10.0	9.5	3-B	11 ⁷ / ₁₆	297
	5F60-394	5F60-1054	3¼	10.0	9.5	4-B	11 ³ / ₁₆	328
5H40	5H40-394	5H40-1104	3¾	11.75	11.0	3-C	13¾	733
	5H60-394	5H60-1104	5¾	11.75	11.0	5-C	13¾	1073
5H60	5H40-394	5H40-1104	3¾	11.75	11.0	3-C	14 ¹ / ₈	733
	5H60-394	5H60-1104	5¾	11.75	11.0	5-C	14½	1073
5H80	5H40-394	5H40-1104	3¾	11.75	11.0	3-C	20½	733
	5H60-394	5H60-1104	5¾	11.75	11.0	5-C	20½	1073
	5H80-394	5H80-1104	6¾	11.75	11.0	6-C	18¾	1244
	5H120-394	5H120-1104	9¾	11.75	11.0	9-C	21¾	2140
5H120	5H60-394	5H60-1104	5¾	11.75	11.0	5-C	20¾	1073
	5H120-394	5H120-1104	9¾	11.75	11.0	9-C	21½	2140

O.D. — Outside Diameter (in.)

WR² — Mass Moment of Inertia (lbs-in.²)

→ **Install Compressor Flywheel** — The flywheel has a tapered bore to fit the taper on the compressor shaft. *It is most important that the flywheel fits the shaft properly.* Because of normal machining variations between the shaft and bore tapers, the following procedure must be followed to attain a proper fit:

1. Apply a light coating of bluing evenly on the shaft. Without the key in place, slide the flywheel onto the shaft with the keyways aligned, exerting moderate pressure, on the flywheel. Tap the flywheel with a soft mallet to seat it, then carefully remove the flywheel from the shaft.
2. Inspect the shaft surface for irregularities. High spots will show as shiny areas. An even coating of bluing on the flywheel bore indicates a good fit.
3. If high spots are indicated, wipe the bluing from the shaft and flywheel bore and apply a light coating of *fine* lapping compound to the shaft. Again, without the key in place, align the keyways and slide the flywheel onto the shaft as far as it will go. Hold the flywheel in this position with moderate pressure and rotate it back and forth approximately ¼ in. each way several times.
4. Remove the flywheel and wipe the lapping compound from the shaft and flywheel bore. Reblue

the shaft and repeat Steps 1 and 2. If necessary, repeat the bluing and lapping process until the proper fit is attained.

5. Wipe the shaft and bore clean and, with the keyways aligned, slide the flywheel onto the shaft as far as it will go with only moderate pressure. Note the position of the flywheel face with respect to the shaft end (the shaft end should be approximately ⅛ in. below the flywheel hub face). Remove the flywheel.
6. Place the key in the keyway and again slide the flywheel onto the shaft as far as it will go, as in Step 5. If the flywheel does not stop in the same position as before, the key is causing the misfit and must be carefully “dressed down” until the fit is correct (use a fine stone).
7. When the flywheel has been properly fitted, apply a coating of rust inhibitor to the shaft. With the key in place, slide the flywheel into position and install the washer and bolt provided with the compressor. Tighten to torque specified in Table 3.

- **Install Motor Pulley** — The motor pulley has a straight bore. Be sure the key fits the shaft and bore keyways, snug but free, then apply a coating of rust inhibitor to the shaft. Slide the pulley onto the shaft until the end of the shaft and the face of the pulley are approximately flush (only moderate hand pressure should be required). Tighten the setscrews in the pulley hub.

→ **Table 3 — Torque Values
(Flywheel to Crankshaft)**

COMPRESSOR	BOLT SIZE (in.)	TORQUE (lb-ft)
5F 20, 30	3/4 - 16*	70 - 80
5F 40, 60	3/8 - 24	45 - 50
5H 40 - 120	5/8 - 18	80 - 90

*Locknut

START-UP

Refer to separate Compressor and Condenser Installation Instructions for start-up information.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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Tab	2a	3a