

Installation Guide

Timken Quick-Flex® Coupling: Standard Coupling



INSTALLATION GUIDE

STANDARD COUPLING INSTALLATION

Please complete the following steps to install Timken Quick-Flex® couplings.

You should have the following pieces before starting the job:

- Two hubs
- One insert
- One cover with included hardware

NOTE

It is critical to identify what style cover you are using, as this will change the hardware included, as well as the installation procedure.

There are four types of covers (fig. 1):

- **High-speed cover:** QF5 through QF175 use standard snap ring to secure cover in place. QF250 and larger use eight bolts with lock washers.
- **Low-speed split cover:** This cover is free floating and is located outside the shoulders of the two hubs. All sizes come with four bolts for securing the two halves together around the insert.
- **High-speed split cover:** QF15 through QF250 use eight bolts around the rim to secure the two halves together, QF500 through QF1890 use 16 bolts, and QF3150 and larger use 20 bolts. QF250 and larger use eight bolts with lock washers to secure the cover to **one** of the hubs.
- **High-performance split cover:** This cover is free floating and is located on the insert with an internal radial groove. All sizes come with four socket head cap screws for securing the two halves together around the insert.

INSTALLATION

1. Check the bore size of the coupling halves and the shafts. Ensure that they are the correct bore size to fit the application.
2. If the coupling does not fit easily, clean and deburr the shafts.
3. Identify cover style:
 - a. **If using a high-speed cover**, it should be placed on the drive shaft. If space does not permit, then it can be mounted on the drive shaft. If cover uses a snap ring, slide the snap ring down the shaft, then slide the cover onto shaft with the larger opening facing the shaft separation.
 - b. **If using a low-speed or high-performance split cover**, leave cover aside and continue to Step 4.
 - c. **If using a high-speed split cover, QF250 and larger**, use bolts and washers to secure in place. Slide one half down each shaft before installing hubs. Do not bolt into place until installation is complete.

NOTE

Standard hubs are supplied with a clearance fit and should slide onto the shaft without excessive force. If the hubs have been ordered with interference fit, then heat the coupling halves to approximately 572° F (300° C) before installing on shafts.

4. Install the first hub. It should be mounted so the end of the shaft is flush with surface "A" as shown in fig. 2. It is acceptable for the shaft to extend past "A" as long as it is not past the teeth shown as "B."
5. Install the second hub with the insert in place. This will set the hubs at the minimum hub gap (G_{Min}) dimension, ensuring proper clearance. For specific G_{Min} and G_{Max} dimensions see table A.
6. Tighten both hubs securely to the shafts.
7. Check coupling for misalignment (table A) and align as necessary.
8. Install the cover:
 - a. **High-speed cover:** Slide the cover over the hub and insert until fully rested against the shoulder of the hub. QF5 through QF175 use standard

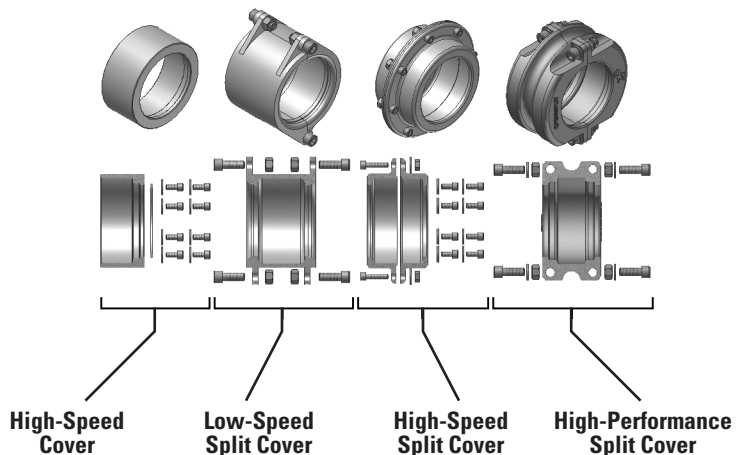


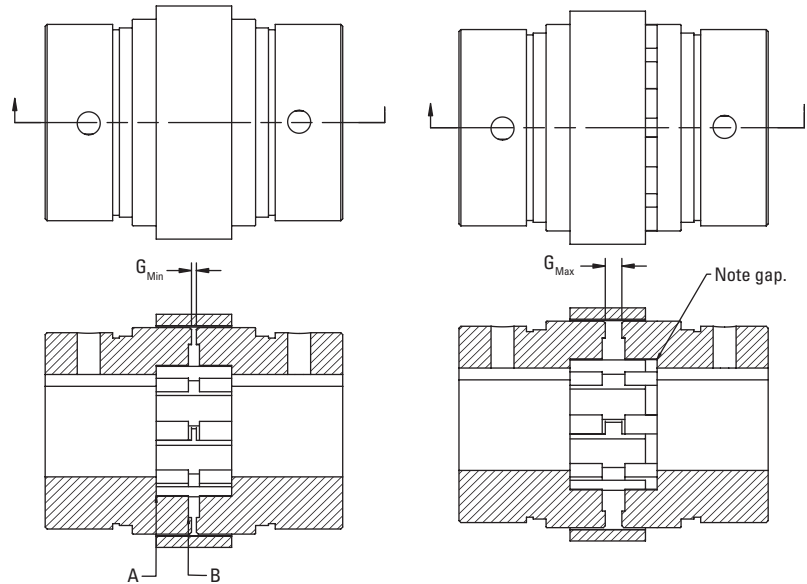
Fig. 1. Quick-Flex cover types and included hardware.

snap rings to hold the cover in place. QF250 and larger couplings use eight bolts and washers. Use the included hardware to secure the cover.

- b. **Low-speed or high-performance split cover:** Place each half over the insert and secure using the four bolt/washer/nut hardware combinations supplied.
- c. **High-speed split cover:** Slide the two cover halves over the hub and insert until faces meet. Install the radial outer bolts used to secure the two halves together. Install the bolts to secure the cover to **one** hub.

The Timken Quick-Flex coupling is machined on all surfaces and thus its dynamic balance is good. If the coupling is run at a high speed, it is important that the keys used to attach the hubs are the same length as the hub. The set screws should also be changed to full length to fill the hole. Please refer to table C for maximum RPM ratings.

REVOLUTIONS PER MINUTE (RPM) AND BALANCE



NOTE

For maximum torque delivery, shaft should penetrate to base of teeth and hubs should be set at G_{min} .

Fig. 2. Proper shaft-to-hub engagement.

TABLE A. QUICK-FLEX COUPLING HUB GAP (G) DIMENSIONS

Coupling Size	High-Speed Cover		Low-Speed Split Cover		High-Speed Split Cover		High-Performance Split Cover	
	G_{Min} in. mm	G_{Max} in. mm	G_{Min} in. mm	G_{Max} in. mm	G_{Min} in. mm	G_{Max} in. mm	G_{Min} in. mm	G_{Max} in. mm
QF5	0.063 1.600	0.092 2.337	N/A	N/A	N/A	N/A	N/A	N/A
QF15	0.036 0.914	0.110 2.794	0.036 0.914	0.099 2.515	0.036 0.914	0.126 3.200	0.036 0.914	0.220 5.588
QF25	0.080 2.032	0.205 5.207	0.080 2.032	0.133 3.378	0.080 2.032	0.140 3.556	0.080 2.032	0.160 4.064
QF50	0.035 0.889	0.208 5.283	0.035 0.889	0.101 2.565	0.035 0.889	0.220 5.588	0.035 0.889	0.160 4.064
QF100	0.140 3.556	0.290 7.366	0.140 3.556	0.380 9.652	0.140 3.556	0.380 9.652	0.140 3.556	0.370 9.398
QF175	0.188 4.775	0.208 5.283	0.188 4.775	0.375 9.525	0.188 4.775	0.348 8.839	0.180 4.572	0.368 9.347
QF250	0.100 2.540	0.230 5.842	0.100 2.540	0.365 9.271	0.100 2.540	0.250 6.350	0.100 2.540	0.318 8.077
QF500	0.125 3.175	0.250 6.350	N/A	N/A	0.125 3.175	0.375 9.525	N/A	N/A
QF1000	0.160 4.064	0.388 9.855	N/A	N/A	0.160 4.064	0.410 10.414	N/A	N/A
QF1890	0.202 5.131	0.278 7.061	N/A	N/A	0.202 5.131	0.454 11.532	N/A	N/A
QF3150	0.070 1.778	0.305 7.747	N/A	N/A	0.070 1.778	0.455 11.557	N/A	N/A
QF10260	0.127 3.225	0.505 12.827	N/A	N/A	0.127 3.225	0.492 12.497	N/A	N/A

TABLE B. QUICK-FLEX MISALIGNMENT TOLERANCES

Coupling Size	Radial Misalignment Tolerance	Axial Misalignment Tolerance	Angular Misalignment Tolerance
	in. mm	in. mm	
QF5	0.020 0.51	0.078 1.98	2°
QF15	0.039 0.99	0.116 2.95	2°
QF25	0.039 0.99	0.116 2.95	2°
QF50	0.038 0.97	0.116 2.95	2°
QF100	0.058 1.47	0.156 3.96	2°
QF175	0.058 1.47	0.175 4.45	1.3°
QF250	0.058 1.47	0.234 5.94	1.3°
QF500	0.058 1.47	0.234 5.94	1°
QF1000	0.058 1.47	0.234 5.94	1°
QF1890	0.058 1.47	0.312 7.92	1°
QF3150	0.078 1.98	0.312 7.92	1°
QF10260	0.078 1.98	0.312 7.92	1°

TABLE C. QUICK-FLEX MAXIMUM RPM RATINGS⁽¹⁾

Coupling Size	High-Speed Cover	Low-Speed Split Cover	High-Speed Split Cover	High-Performance Split Cover
	RPM	RPM	RPM	RPM
QF5	12000	n/a	n/a	n/a
QF15	9000	400	n/a	8100
QF25	7000	375	n/a	6300
QF50	6000	350	6000	5400
QF100	4800	300	4800	4320
QF175	4200	250	4200	3780
QF250	3800	200	3800	3420
QF500	3400	n/a	3400	n/a
QF1000	3000	n/a	3000	n/a
QF1890	2400	n/a	2400	n/a
QF3150	2000	n/a	2000	n/a
QF10260	1200	n/a	1200	n/a

⁽¹⁾Maximum RPM ratings are for off-the-shelf Quick-Flex couplings. If your application requires higher RPM ratings, the couplings should be dynamically balanced.

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