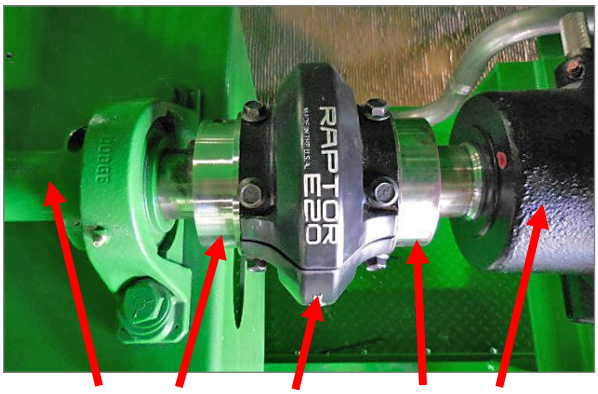
CHECKING COUPLING ALIGNMENT

This Technical Memorandum covers FireBox Models equipped with Dodge Raptor Couplings. The S-327 and S-330 use Size E30 (Air Burners Replacement Part Number 5000-2120) and all other FireBox models use Size E20 (Air Burners Replacement Part Number 5000-5123). Certain FireBoxes equipped with electric motors are also fitted with Dodge Raptor couplings. The general coupling information in this Technical Memorandum applies to them also.



The coupling shown above is an E20 with the protective guard removed.

TOOLS REQUIRED

Coupling hubs should be aligned using straight edges or calipers. Laser alignment tools, or other precision alignment equipment can be used but are not required.

Tools

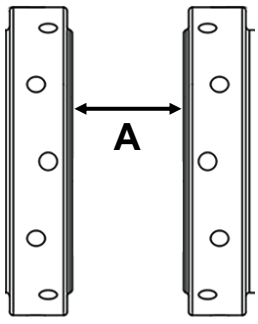
1. Two open-end wrenches, 3/4”
2. Torque wrench
3. Sockets/wrenches, 9/16” & 7/16”
4. Straight Edge Ruler or Calipers

WEAR PROTECTIVE GEAR

Step 1 Preparation

1. Lock out engine/motor to prevent accidental start which could cause injury.
2. Remove the protective metal guard (Not shown in image above) from fan.
3. Take off the element by removing the Grade A bolts holding the two halves together. Bolts should be used only one time. All bolts use thread locking patches.
4. If any coupling adjustments are required, be prepared to realign the engine by adjusting the four engine isolators until the measurements of Steps 2, 3 and 4 are achieved.

Step 2 Verify Gap Between Hubs



1. Measure the distance “A” between the hubs with calipers or other appropriate tool
2. If needed, set distance “A” as follows:

GAP MEASUREMENT “A”		
E20	2.46”	62mm
E30	2.55”	65mm

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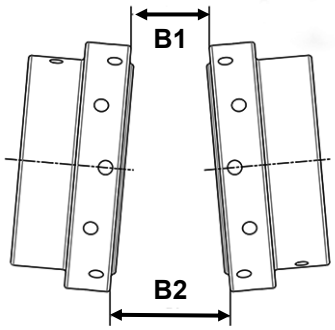
CHECKING COUPLING ALIGNMENT

Step 3 Verify Angular Alignment of Hubs

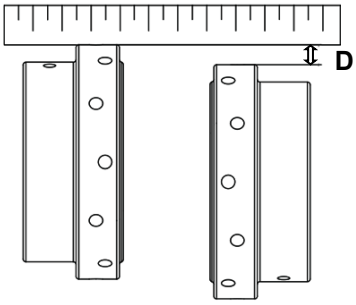


C=B2-B1

1. Measure the distance “B” between the hubs with calipers or other appropriate tool at four places on the outer diameter of the hub 90° apart.
2. Use the “B2” and “B1 ” measurements to calculate “C” by subtracting the smaller measurement from the larger number, and do this for each of the 90° apart planes .
3. Adjust the engine isolators until the “C” measurements of both planes do not exceed these Angular Values:

ANGULAR VALUE “C”		
E20	0.235”	6mm
E30	0.284”	7.2mm

Step 4 Verify Parallel Alignment of Hubs



D is the distance between straight edge and lower outer hub edge

1. Check parallel misalignment by placing a straight edge across the outside diameter of the hubs and measuring the gap between the straight edge and the hub at four locations 90° apart.
2. Adjust the engine isolators until the “D” measurements do not exceed these Parallel Values.

PARALLEL VALUE “D”		
E20	0.188”	4.8mm
E30	0.188”	4.8mm

Step 5 Element Installation

1. Place first element half on hubs and hand-tighten the flange head bolts. When tightening the bolts, start at the center bolt hole and then install the bolts on the neighboring holes.
2. Place the second half of the element on the hubs and follow the same procedure. Hand-tighten the flange head bolts.
3. Use a torque wrench to tighten all fasteners for the E20 and E30 to these torque values (same for both):

ELEMENT BOLT TORQUE VALUES				
	Bolt Size	In-lbs	ft-lbs	Nm
E20 & E30	3/8	502	42	57

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