Engineering Process Automation

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RotorModeler

User Manual

Model Translator

XLRotor to Dyrobes

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Engineering Process Automation

1.0 Block Diagram: RotorModeler

1.1 Mode 1 - XLRotor to Dyrobes via RotorModeler (Transparent Mode)

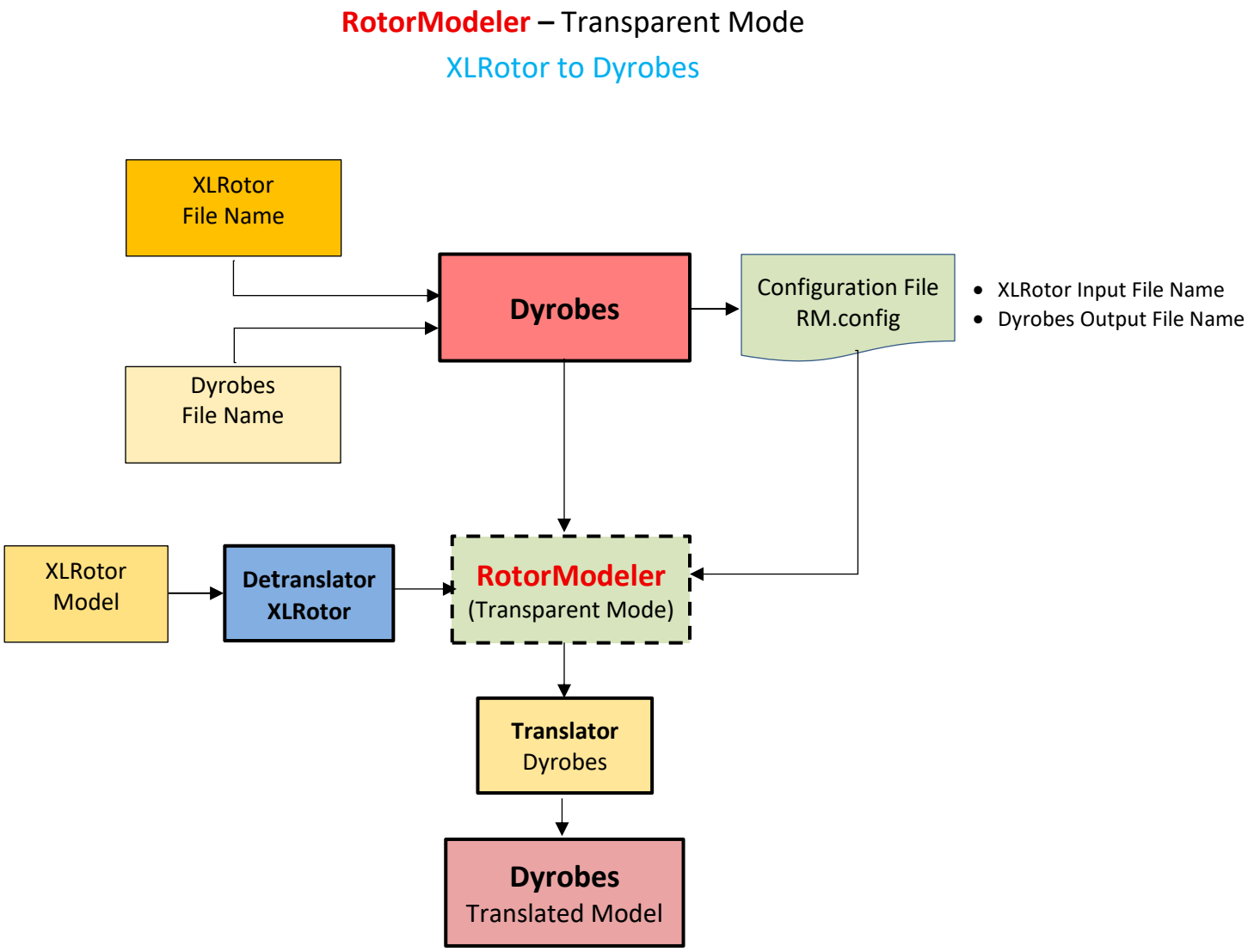

Figure 1A:

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1.2 Mode 2 – XLRotor to Dyrobes via RotorModeler (Active Mode)

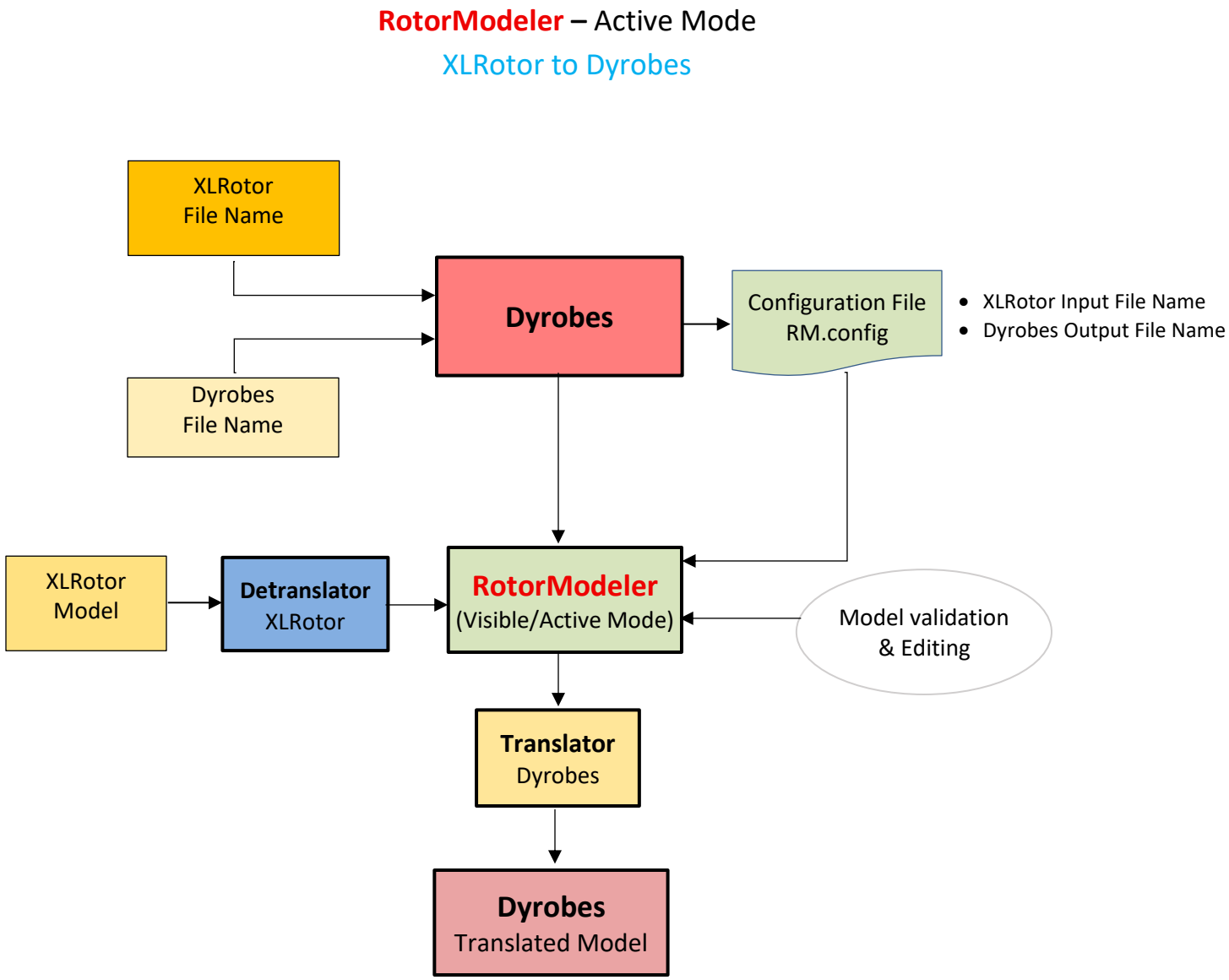

Figure 1B:

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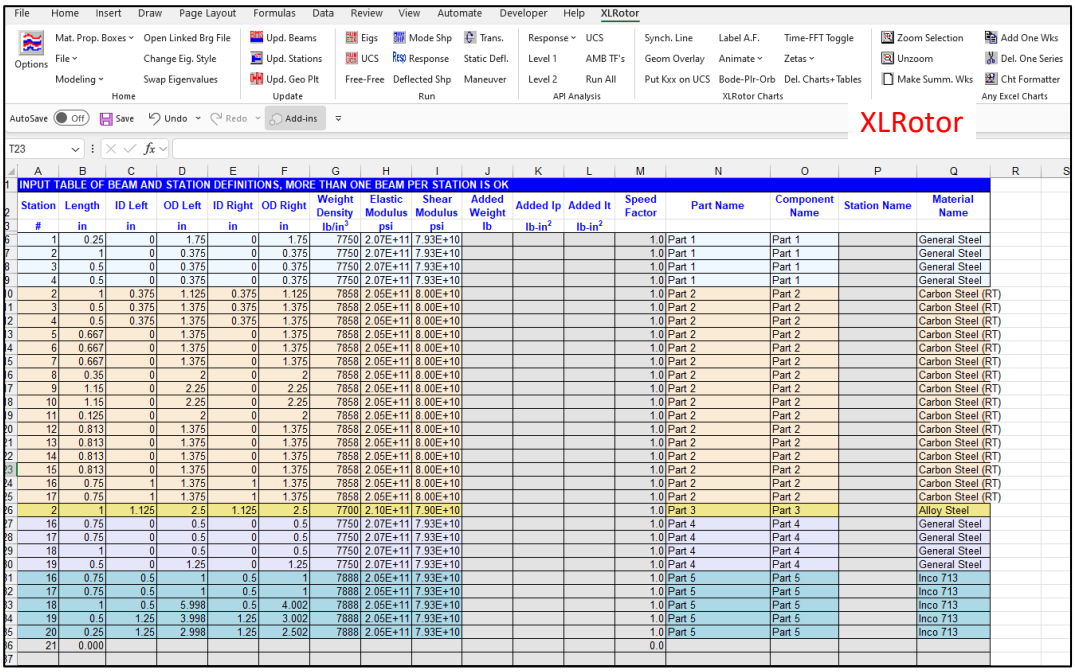
2.0 Rotor Modeler – Transparent Mode

XLRotor - Shaft Input Sheet



INPUT TABLE OF BEAM AND STATION DEFINITIONS, MORE THAN ONE BEAM PER STATION IS OK

Station #	Length in	ID Left in	OD Left in	ID Right in	OD Right in	Weight Density lb/in³	Elastic Modulus psi	Shear Modulus psi	Added Weight lb	Added Ip lb-in²	Added It lb-in²	Speed Factor	Part Name	Component Name	Station Name	Material Name
1	0.25	0	1.75	0	1.75	7750	2.07E+11	7.93E+10				1.0	Part 1	Part 1		General Steel
2	1	0	0.375	0	0.375	7750	2.07E+11	7.93E+10				1.0	Part 1	Part 1		General Steel
3	0.5	0	0.375	0	0.375	7750	2.07E+11	7.93E+10				1.0	Part 1	Part 1		General Steel
4	0.5	0	0.375	0	0.375	7750	2.07E+11	7.93E+10				1.0	Part 1	Part 1		General Steel
2	1	0.375	1.125	0.375	1.125	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
3	0.5	0.375	1.375	0.375	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
4	0.5	0.375	1.375	0.375	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
5	0.667	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
6	0.667	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
7	0.667	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
8	0.35	0	2	0	2	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
9	1.15	0	2.25	0	2.25	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
10	1.15	0	2.25	0	2.25	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
11	0.125	0	2	0	2	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
12	0.813	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
13	0.813	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
14	0.813	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
15	0.813	0	1.375	0	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
16	0.75	1	1.375	1	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
17	0.75	1	1.375	1	1.375	7858	2.05E+11	8.00E+10				1.0	Part 2	Part 2		Carbon Steel (RT)
2	1	1.125	2.5	1.125	2.5	7700	2.10E+11	7.90E+10				1.0	Part 3	Part 3		Alloy Steel
16	0.75	0	0.5	0	0.5	7750	2.07E+11	7.93E+10				1.0	Part 4	Part 4		General Steel
17	0.75	0	0.5	0	0.5	7750	2.07E+11	7.93E+10				1.0	Part 4	Part 4		General Steel
18	1	0	0.5	0	0.5	7750	2.07E+11	7.93E+10				1.0	Part 4	Part 4		General Steel
19	0.5	0	1.25	0	1.25	7750	2.07E+11	7.93E+10				1.0	Part 4	Part 4		General Steel
16	0.75	0.5	1	0.5	1	7888	2.05E+11	7.93E+10				1.0	Part 5	Part 5		Inco 713
17	0.75	0.5	1	0.5	1	7888	2.05E+11	7.93E+10				1.0	Part 5	Part 5		Inco 713
18	1	0.5	5.998	0.5	4.002	7888	2.05E+11	7.93E+10				1.0	Part 5	Part 5		Inco 713
19	0.5	1.25	3.998	1.25	3.002	7888	2.05E+11	7.93E+10				1.0	Part 5	Part 5		Inco 713
20	0.25	1.25	2.998	1.25	2.502	7888	2.05E+11	7.93E+10				1.0	Part 5	Part 5		Inco 713
21	0.000											0.0				

Figure 2A:

XLRotor - Geo Plot

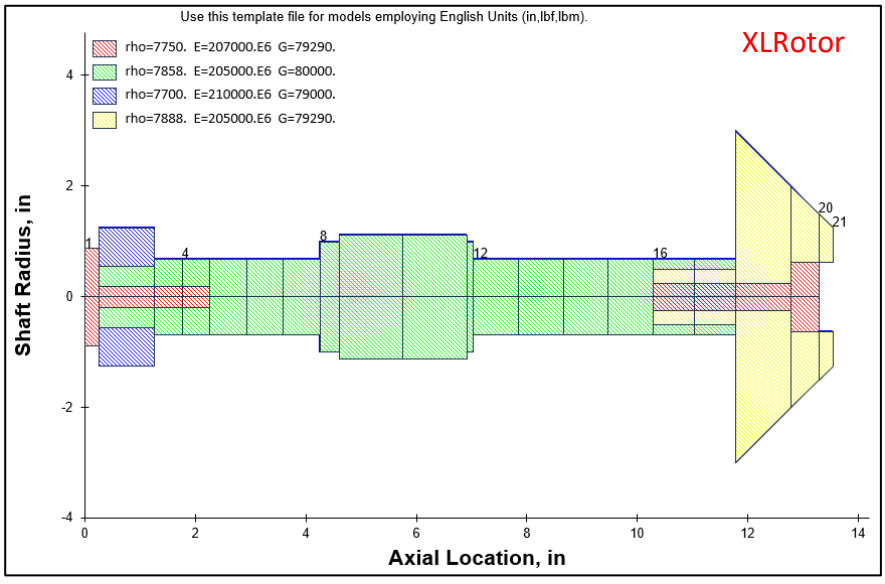


Figure 2B:

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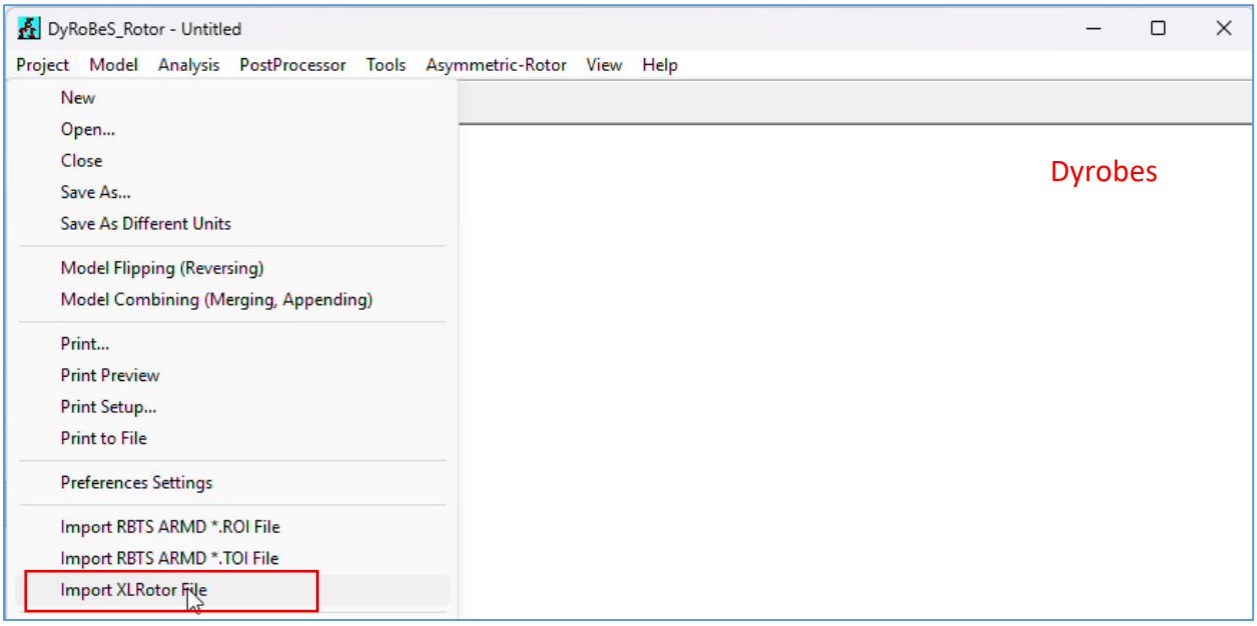

Figure 3: Launch Dyrobes

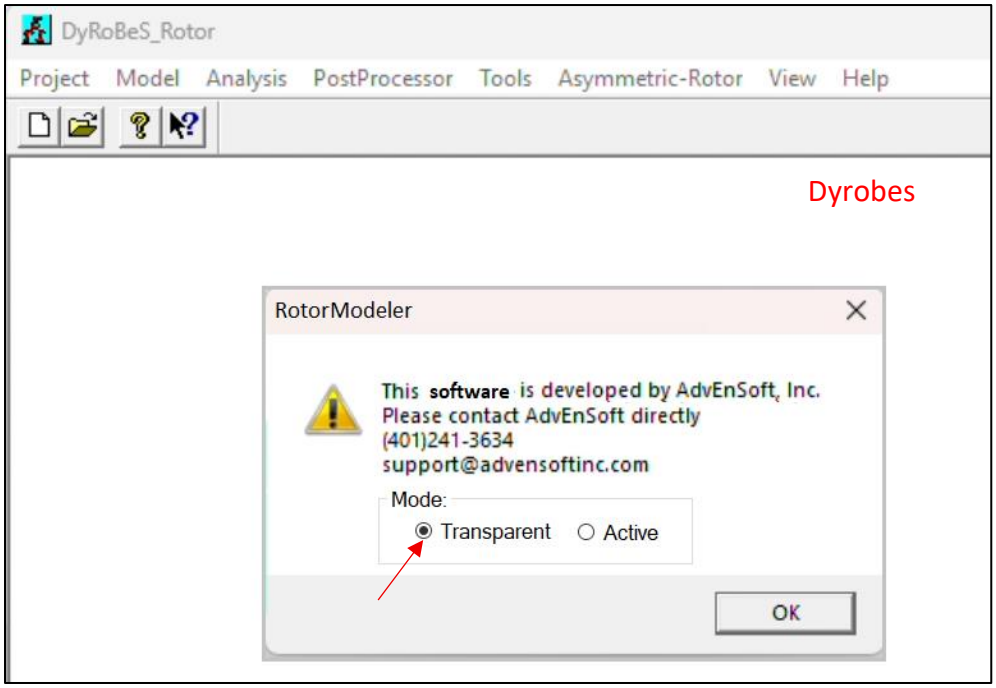

Figure 4: Mode selection

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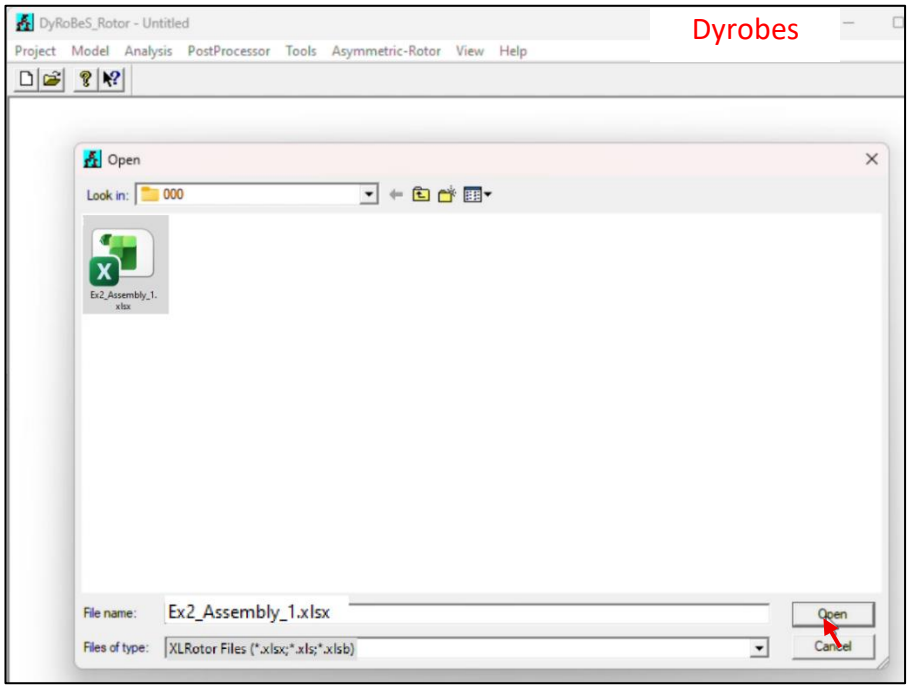

Figure 5A: Select XLRotor File

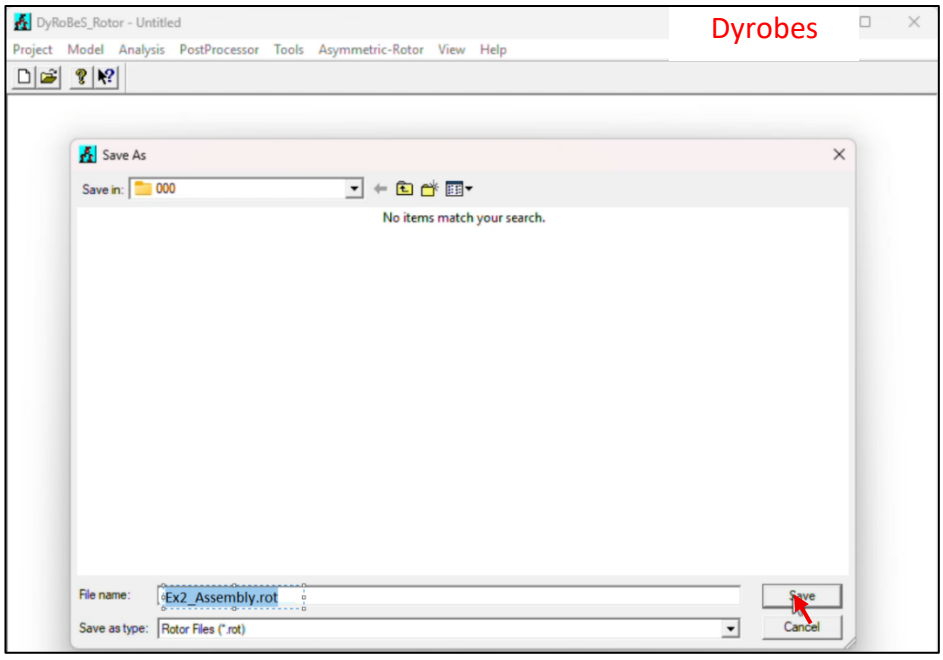

Figure 5B: Specify Dyrobes Output File

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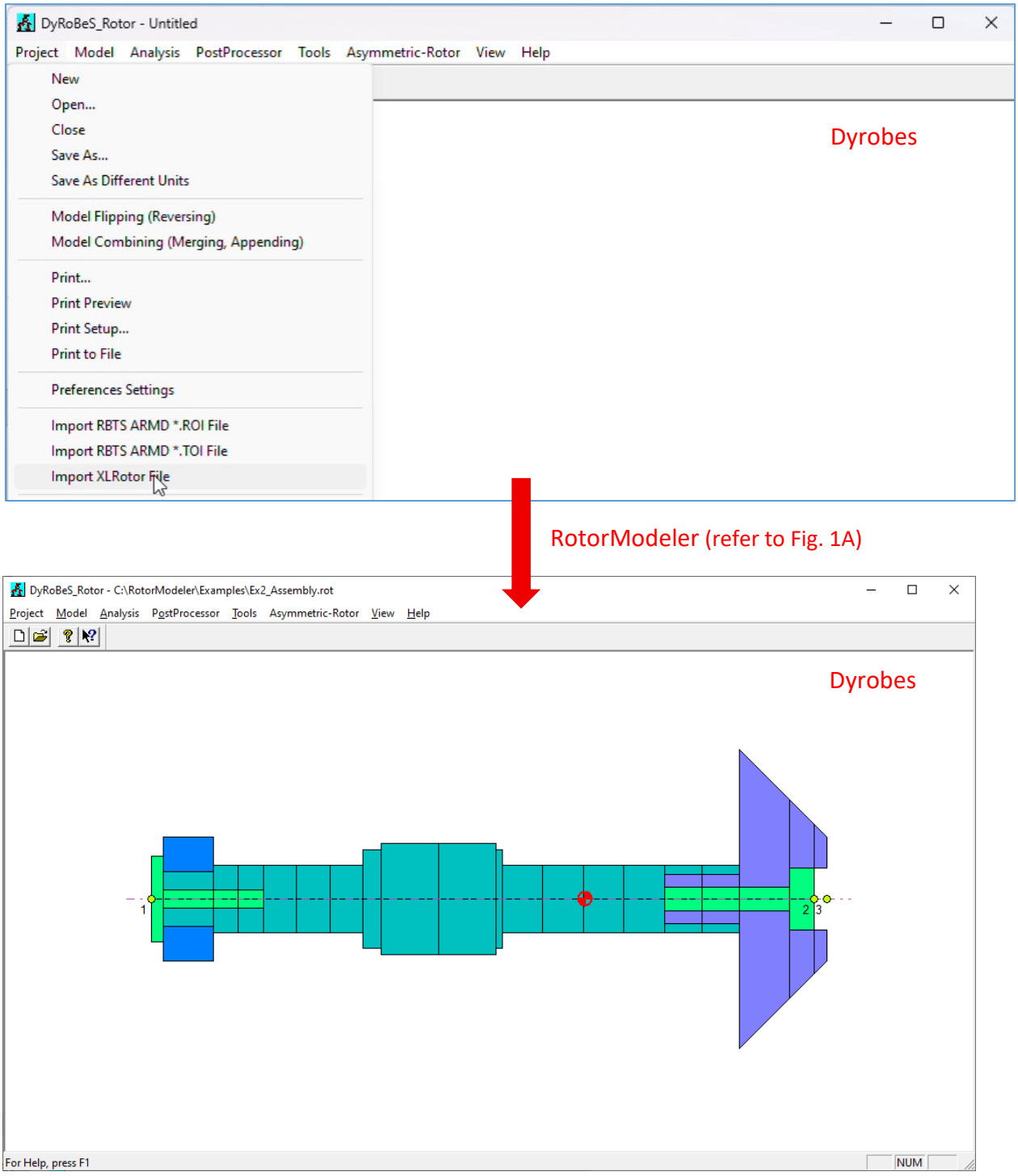

Figure 6: Dyrobes - Translated XLRotor Model

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3.0 RotorModeler – Active Mode

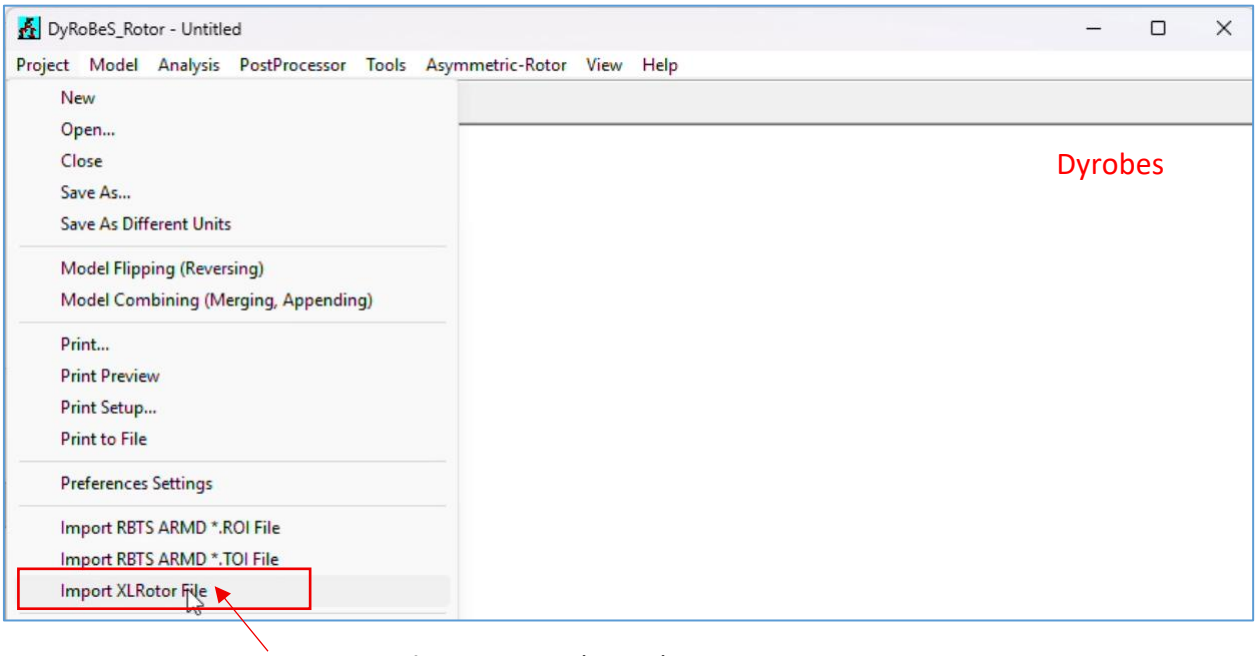

Figure 7: Launch Dyrobes

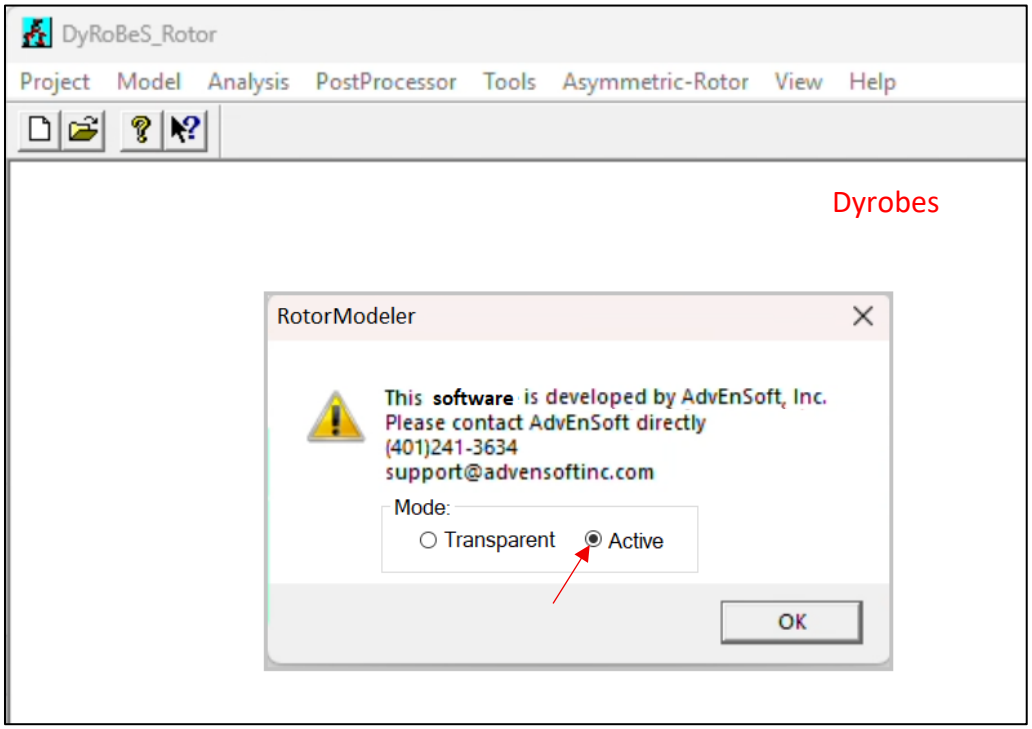

Figure 8: Mode selection

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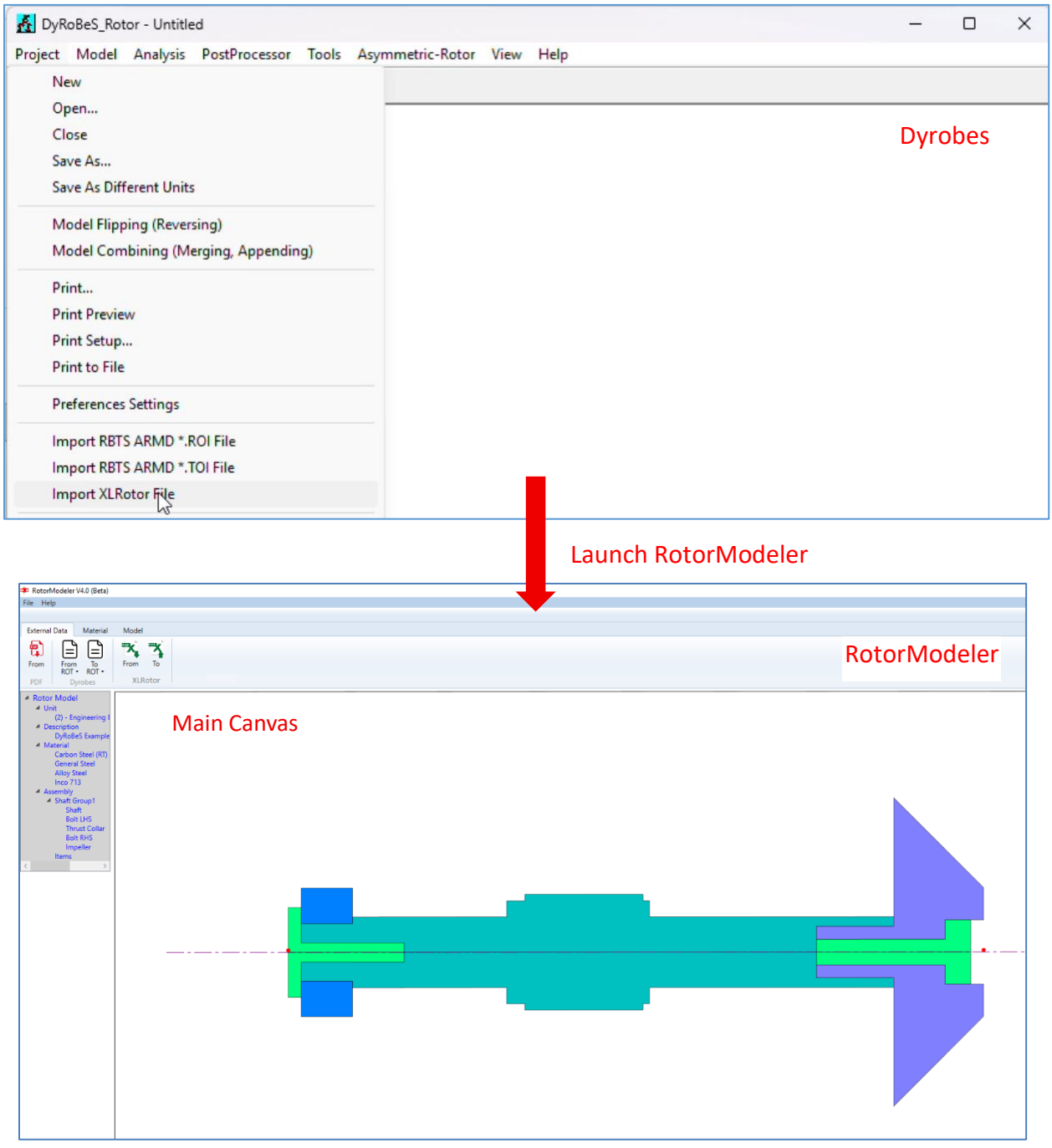

Figure 9A: XLRotor Model imported into RotorModeler - Main Canvas

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Export Model to Dyrobes

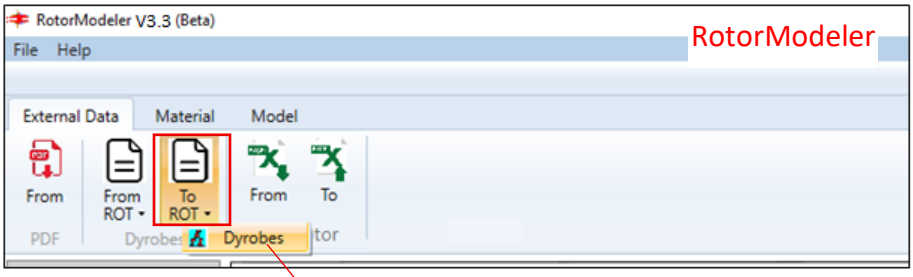

Figure 9B:

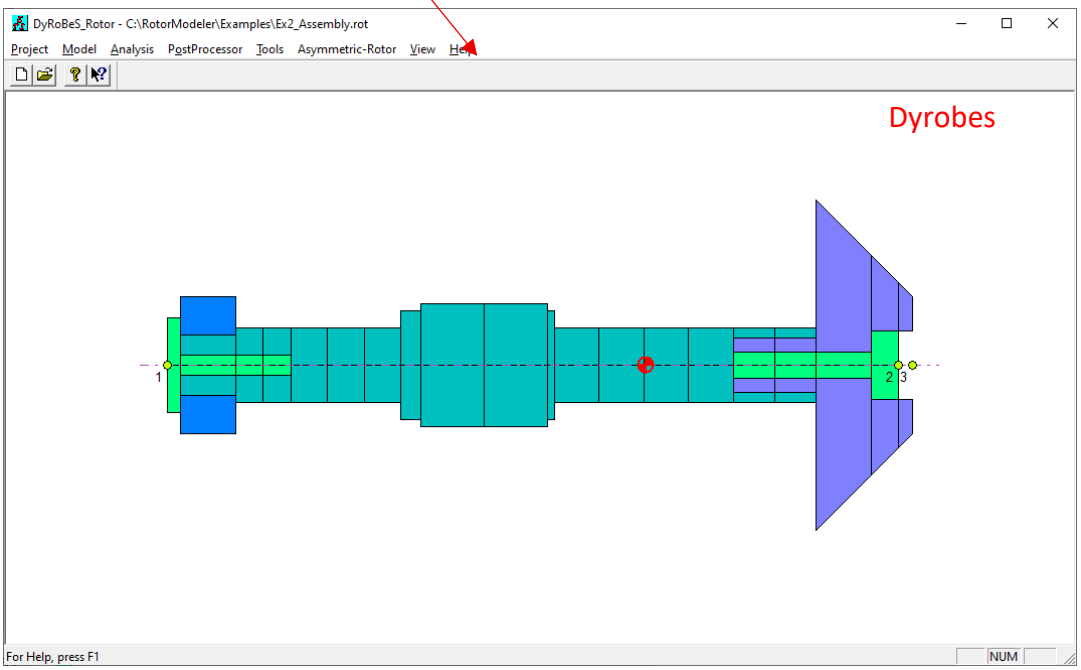

Figure 10: XLRotor Model imported into Dyrobes through RotorModeler

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4.0 Examples

4.1 Ex #1

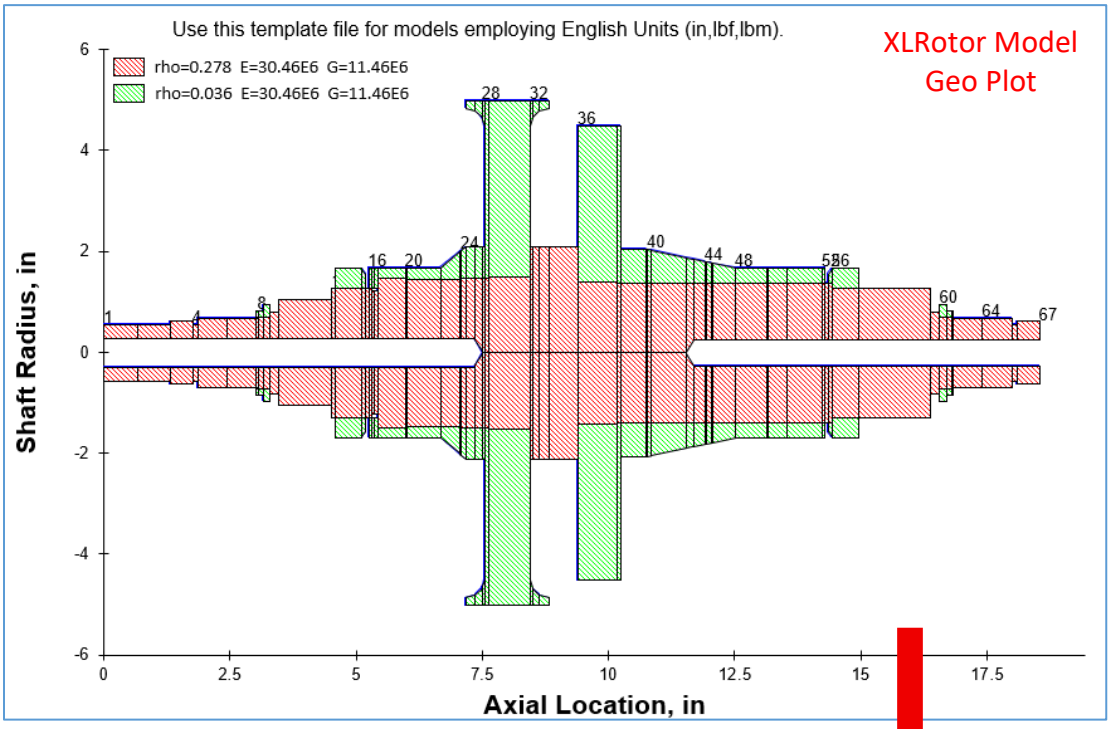

Figure 5A:

Translated thru' RotorModeler

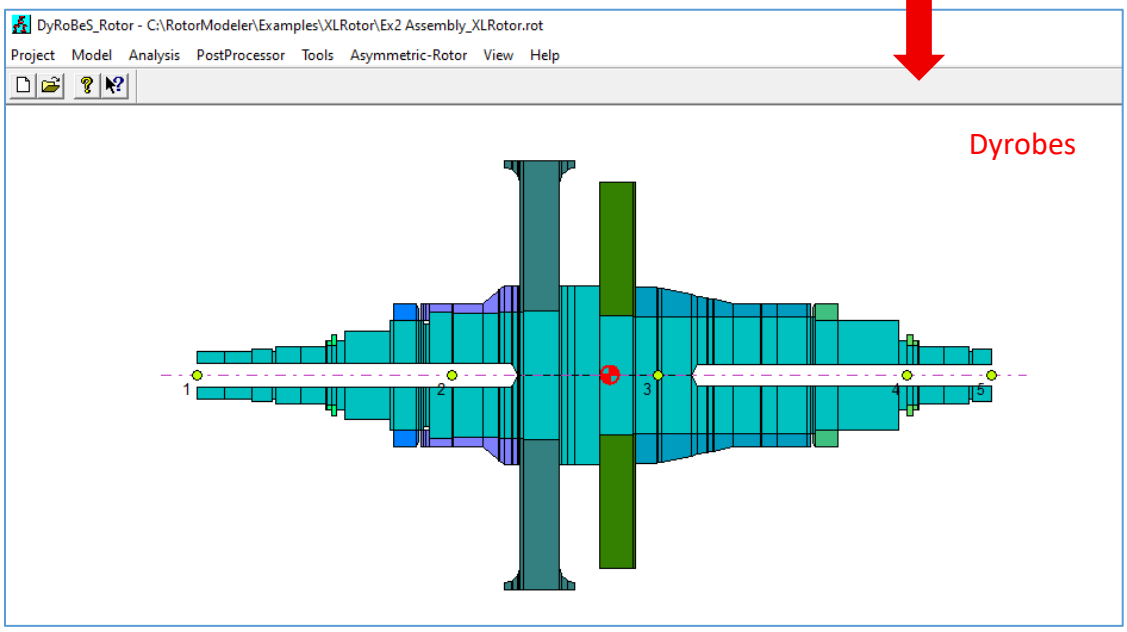

Figure 5B:

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4.2 Ex #2

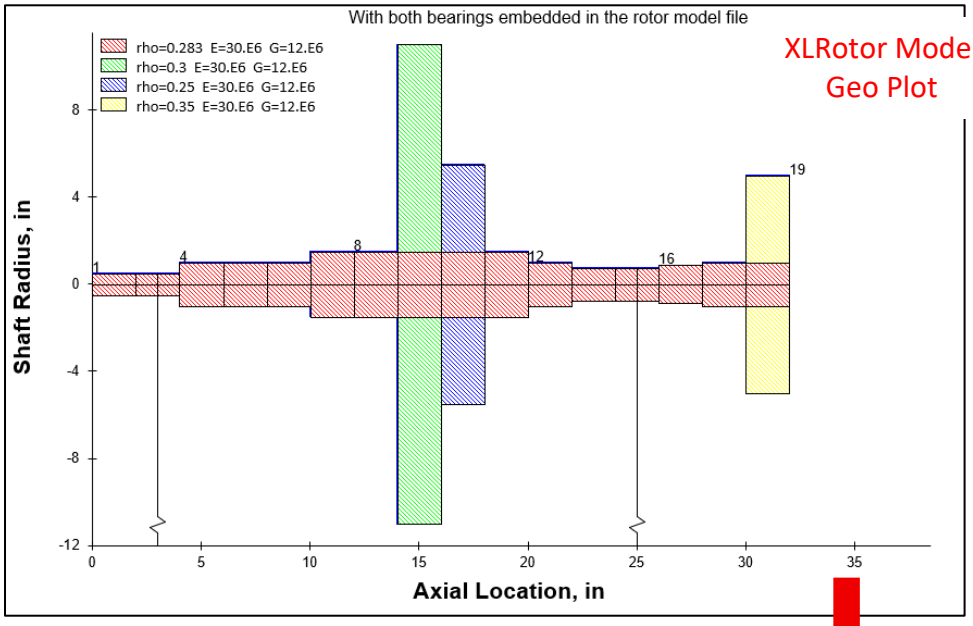

Figure 6A:

Translated thru' RotorModeler

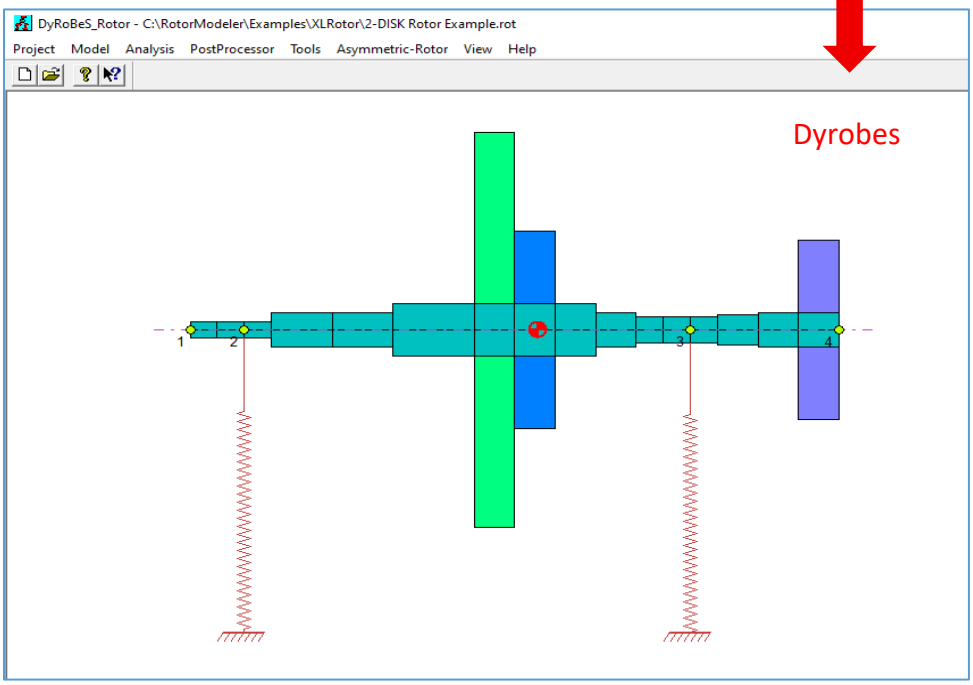

Figure 6B:

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