

Cranktrain Mass Elastic System

Data valid for all Standard 4 Cylinder Marine engines, possible add on adapters to flywheel have to added to mass system

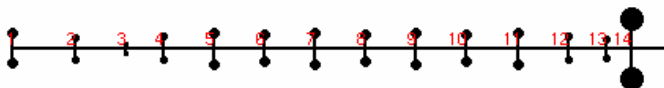
Engine data

Engine Type	M14TCAM		
Number of Cyl.	4		
Firing order	1 3 4 2		
Bore	85	mm	
Stroke	94	mm	
Displacement / cyl.	0,53	dm ³	
Total displacement	2,1	dm ³	
Conrod length	151	mm	
Main journal diameter	65	mm	
Crankpin diameter	52	mm	

Mass inertia and stiffness data

Piston mass	0,985000	kg
Conrod oscillating mass	0,251300	kg
Conrod rotating mass	0,713700	kg
Total oscillating mass	1,236300	kg
Mass of Flywheel	14,8	kg

Torsional System



Number	Designation	Inertia [kgm ²]
1	Damper Ring 1	0,006890
2	Damper Hub	0,002171
3	Sement 1 - Main Journal 1	0,000071
4	Main Journal 1	0,002501
5	Crank Pin 1	0,008274
6	Main Journal 2	0,004673
7	Crank Pin 2	0,008274
8	Main Journal 3	0,004673
9	Crank Pin 3	0,008274
10	Main Journal 4	0,004673
11	Crank Pin 4	0,008274
12	Main Journal 5	0,002496
13	Main Journal 1 - Sement2	0,000582
14	Flywheel	0,248000

Equivalent piston inertia (Frahm approximation) per cylinder = 0,002942 kgm²

Engine inertia (Damper, Crankshaft, equivalent piston inertia, flywheel) = 0,3216 kgm²

Number	Designation	Stiffness [Nm/rad]
1-2	Damper 1	39200
2-3	Segment 1	277500
3-4	Half Main Journal 1	12140000
4-5	Web 1	1254000
5-6	Web 2	1452000
6-7	Web 3	1412000
7-8	Web 4	1295000
8-9	Web 5	1263000
9-10	Web 6	1456000
10-11	Web 7	1413000
11-12	Web 8	1309000
12-13	Half Main Journal 5	12500000
13-14	Segment 2	39650000