

X72-B

External forces and moments

Crankshaft type : Full crank pin

Rating R1 : 3920 kW/Cyl. @ 89 rpm / Standard Tuning

Engine Type		5X72-B	6X72-B	7X72-B	8X72-B
Speed		89 rpm	89 rpm	89 rpm	89 rpm
Power		19600 kW	23520 kW	27440 kW	31360 kW
Crank type		FCV2	FCV2	FCV2	FCV1
Massmoments / Forces					
Free Forces					
F1v	[±kN]	0	0	0	0
F1h	[±kN]	0	0	0	0
F2v	[±kN]	0	0	0	0
F4v	[±kN]	0	0	0	0
External Moments					
M1v	[±kNm]	379	0	230	759
M1h	[±kNm]	383	0	223	762
M2v	[±kNm]	4520	3144	913	0
M2v *)	[±kNm]	1749	1556	-	-
M4v	[±kNm]	28	218	620	252
Lateral H-Moments M_{LH}					
Ord.1	[±kNm]	0	0	0	0
Ord.2	[±kNm]	0	0	0	0
Ord.3	[±kNm]	0	0	0	0
Ord.4	[±kNm]	0	0	0	0
Ord.5	[±kNm]	2799	0	0	0
Ord.6	[±kNm]	0	2091	0	0
Ord.7	[±kNm]	0	0	1676	0
Ord.8	[±kNm]	0	0	0	1207
Ord.9	[±kNm]	0	0	0	0
Ord.10	[±kNm]	289	0	0	0
Ord.11	[±kNm]	0	0	0	0
Ord.12	[±kNm]	0	102	0	0
Lateral X-Moments M_{LX}					
Ord.1	[±kNm]	289	0	172	577
Ord.2	[±kNm]	410	285	83	0
Ord.3	[±kNm]	242	437	478	613
Ord.4	[±kNm]	100	768	2184	887
Ord.5	[±kNm]	0	0	171	2148
Ord.6	[±kNm]	41	0	25	0
Ord.7	[±kNm]	331	0	0	60
Ord.8	[±kNm]	201	140	11	0
Ord.9	[±kNm]	10	203	23	20
Ord.10	[±kNm]	0	56	160	0
Ord.11	[±kNm]	4	0	78	100
Ord.12	[±kNm]	21	0	4	17
Torque variation	[±kNm]	2863	2118	1688	1209

*) with iELBA applied at FE + DE

The values for other engine ratings are available on request

The resulting lateral guide force at the crosshead can be estimated as follows: $FL = MLH \times 0.215$ [kN]

X72-B

External forces and moments

Crankshaft type : Full crank pin

Rating R1 : 3920 kW/Cyl. @ 89 rpm / Delta Tuning

Engine Type		5X72-B	6X72-B	7X72-B	8X72-B
Speed		89 rpm	89 rpm	89 rpm	89 rpm
Power		19600 kW	23520 kW	27440 kW	31360 kW
Crank type		FCV2	FCV2	FCV2	FCV1
Massmoments / Forces					
Free Forces					
F1v	[±kN]	0	0	0	0
F1h	[±kN]	0	0	0	0
F2v	[±kN]	0	0	0	0
F4v	[±kN]	0	0	0	0
External Moments					
M1v	[±kNm]	379	0	230	759
M1h	[±kNm]	383	0	223	762
M2v	[±kNm]	4520	3144	913	0
M2v *)	[±kNm]	1749	1556	-	-
M4v	[±kNm]	28	218	620	252
Lateral H-Moments M_{LH}					
Ord.1	[±kNm]	0	0	0	0
Ord.2	[±kNm]	0	0	0	0
Ord.3	[±kNm]	0	0	0	0
Ord.4	[±kNm]	0	0	0	0
Ord.5	[±kNm]	2713	0	0	0
Ord.6	[±kNm]	0	2007	0	0
Ord.7	[±kNm]	0	0	1604	0
Ord.8	[±kNm]	0	0	0	1149
Ord.9	[±kNm]	0	0	0	0
Ord.10	[±kNm]	278	0	0	0
Ord.11	[±kNm]	0	0	0	0
Ord.12	[±kNm]	0	104	0	0
Lateral X-Moments M_{LX}					
Ord.1	[±kNm]	287	0	171	572
Ord.2	[±kNm]	449	313	91	0
Ord.3	[±kNm]	258	466	510	654
Ord.4	[±kNm]	97	751	2134	867
Ord.5	[±kNm]	0	0	166	2083
Ord.6	[±kNm]	39	0	23	0
Ord.7	[±kNm]	317	0	0	57
Ord.8	[±kNm]	190	132	10	0
Ord.9	[±kNm]	10	193	22	19
Ord.10	[±kNm]	0	55	155	0
Ord.11	[±kNm]	3	0	75	96
Ord.12	[±kNm]	22	0	4	18
Torque variation	[±kNm]	2770	2031	1613	1151

*) with iELBA applied at FE + DE

The values for other engine ratings are available on request

The resulting lateral guide force at the crosshead can be estimated as follows: FL=MLH x 0.215 [kN]

X72-B

External forces and moments

Crankshaft type : Full crank pin

Rating R1 : 3920 kW/Cyl. @ 89 rpm / Low-Load Tuning

Engine Type		5X72-B	6X72-B	7X72-B	8X72-B
Speed		89 rpm	89 rpm	89 rpm	89 rpm
Power		19600 kW	23520 kW	27440 kW	31360 kW
Crank type		FCV2	FCV2	FCV2	FCV1
Massmoments / Forces					
Free Forces					
F1v	[±kN]	0	0	0	0
F1h	[±kN]	0	0	0	0
F2v	[±kN]	0	0	0	0
F4v	[±kN]	0	0	0	0
External Moments					
M1v	[±kNm]	379	0	230	759
M1h	[±kNm]	383	0	223	762
M2v	[±kNm]	4520	3144	913	0
M2v *)	[±kNm]	1749	1556	-	-
M4v	[±kNm]	28	218	620	252
Lateral H-Moments M_{LH}					
Ord.1	[±kNm]	0	0	0	0
Ord.2	[±kNm]	0	0	0	0
Ord.3	[±kNm]	0	0	0	0
Ord.4	[±kNm]	0	0	0	0
Ord.5	[±kNm]	2721	0	0	0
Ord.6	[±kNm]	0	2013	0	0
Ord.7	[±kNm]	0	0	1610	0
Ord.8	[±kNm]	0	0	0	1155
Ord.9	[±kNm]	0	0	0	0
Ord.10	[±kNm]	280	0	0	0
Ord.11	[±kNm]	0	0	0	0
Ord.12	[±kNm]	0	105	0	0
Lateral X-Moments M_{LX}					
Ord.1	[±kNm]	287	0	171	574
Ord.2	[±kNm]	444	309	90	0
Ord.3	[±kNm]	258	466	510	654
Ord.4	[±kNm]	98	753	2140	870
Ord.5	[±kNm]	0	0	167	2089
Ord.6	[±kNm]	40	0	24	0
Ord.7	[±kNm]	318	0	0	57
Ord.8	[±kNm]	192	133	10	0
Ord.9	[±kNm]	10	194	22	19
Ord.10	[±kNm]	0	55	156	0
Ord.11	[±kNm]	4	0	76	97
Ord.12	[±kNm]	22	0	5	18
Torque variation	[±kNm]	2779	2037	1619	1157

*) with iELBA applied at FE + DE

The values for other engine ratings are available on request

The resulting lateral guide force at the crosshead can be estimated as follows: $FL = MLH \times 0.215$ [kN]

X72-B

External forces and moments

Crankshaft type : Full crank pin

Rating R1 : 3920 kW/Cyl. @ 89 rpm / Delta-Bypass Tuning

Engine Type		5X72-B	6X72-B	7X72-B	8X72-B
Speed		89 rpm	89 rpm	89 rpm	89 rpm
Power		19600 kW	23520 kW	27440 kW	31360 kW
Crank type		FCV2	FCV2	FCV2	FCV1
Massmoments / Forces					
Free Forces					
F1v	[±kN]	0	0	0	0
F1h	[±kN]	0	0	0	0
F2v	[±kN]	0	0	0	0
F4v	[±kN]	0	0	0	0
External Moments					
M1v	[±kNm]	379	0	230	759
M1h	[±kNm]	383	0	223	762
M2v	[±kNm]	4520	3144	913	0
M2v *)	[±kNm]	1749	1556	-	-
M4v	[±kNm]	28	218	620	252
Lateral H-Moments M_{LH}					
Ord.1	[±kNm]	0	0	0	0
Ord.2	[±kNm]	0	0	0	0
Ord.3	[±kNm]	0	0	0	0
Ord.4	[±kNm]	0	0	0	0
Ord.5	[±kNm]	2754	0	0	0
Ord.6	[±kNm]	0	2044	0	0
Ord.7	[±kNm]	0	0	1636	0
Ord.8	[±kNm]	0	0	0	1177
Ord.9	[±kNm]	0	0	0	0
Ord.10	[±kNm]	288	0	0	0
Ord.11	[±kNm]	0	0	0	0
Ord.12	[±kNm]	0	109	0	0
Lateral X-Moments M_{LX}					
Ord.1	[±kNm]	289	0	172	576
Ord.2	[±kNm]	425	296	86	0
Ord.3	[±kNm]	253	458	501	642
Ord.4	[±kNm]	99	761	2162	878
Ord.5	[±kNm]	0	0	168	2113
Ord.6	[±kNm]	40	0	24	0
Ord.7	[±kNm]	323	0	0	58
Ord.8	[±kNm]	195	136	11	0
Ord.9	[±kNm]	10	199	22	20
Ord.10	[±kNm]	0	56	160	0
Ord.11	[±kNm]	4	0	79	101
Ord.12	[±kNm]	23	0	5	19
Torque variation	[±kNm]	2813	2068	1646	1179

*) with iELBA applied at FE + DE

The values for other engine ratings are available on request

The resulting lateral guide force at the crosshead can be estimated as follows: FL=MLH x 0.215 [kN]

5-8 X72-B / Free external mass moments Power Related Unbalance (PRU) Rating R1 3920 kW/Cyl @ 89 rpm

Crankshaft type: Full crank pin

