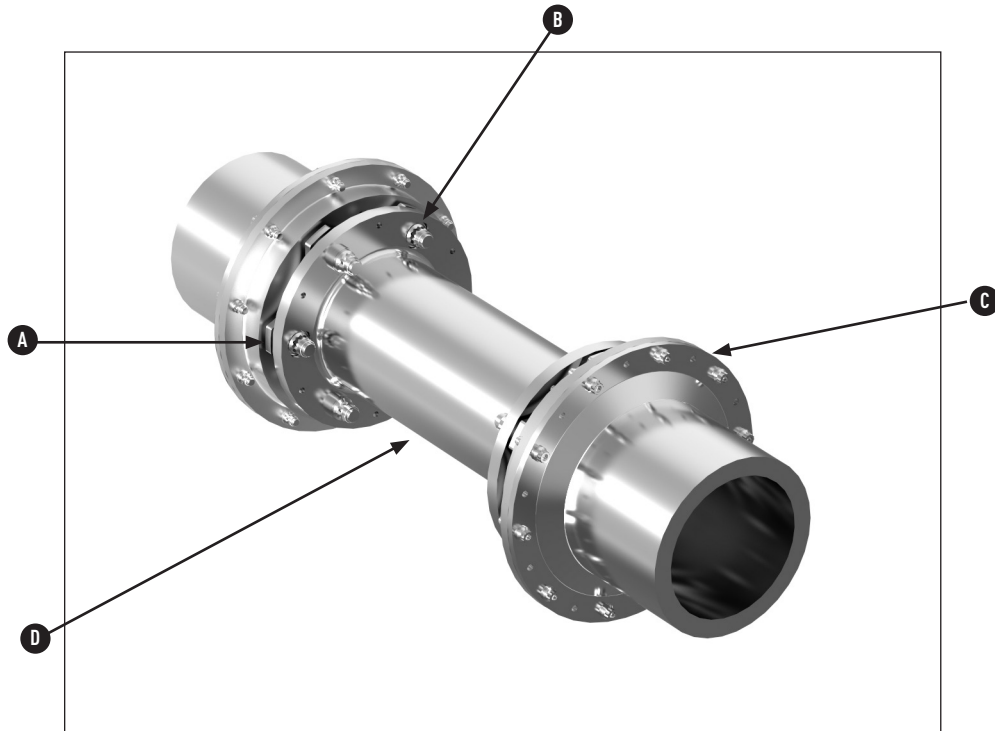


- A – High-strength stainless steel flexible membranes
- B – Overload collars
- C – Flanged connections
- D – Optimised materials



Product Description

John Crane's H-LE & H-LA Couplings feature a factory assembled transmission unit, providing high torque capacity with reduced weight and reduced overhung moment. The large hub bores possible with these designs make this range particularly suitable for use on electric motor or API 671 pump applications, where large shaft sizes are generally in use.

- H-LE/H-LA are available as standard in 6 (HS), 8 (HL) or 10 (HT) link membrane arrangements offering torque capacity and flexibility to suit every application.
- The transmission unit is simple to install and remove for rapid separation of the two machines, providing easy access for alignment and equipment maintenance.
- The flanged H-LE/H-LA transmission unit can be readily adapted to match the integral shaft flanges used on many large pieces of rotating equipment.
- When required H-LE couplings can be supplied with axial shims for adjustment for example when used with tapered shafts. These designs are designated H-LA.

Design Features

- Large hub bore capacity
- Factory assembled transmission unit
- High reliability stainless steel flexible membrane design
- Built in overload collars for additional safety
- Reduced mass and reduced overhung moment
- Optional shrouded bolts
- Axial shims for length adjustment when required (H-LA)
- API 671 (ISO 10441) compliant
- ATEX Compliant
- Operating temperatures; -15° to 150°C (5° to 302°F)

TYPE H-LE/H-LA

H SERIES HIGH PERFORMANCE COUPLINGS

HSLE/HLE/HTLE Technical Data (metric)

Coupling Designation	Coupling Rating kW/1000 rpm	Continuous Torque Rating Nm	Peak Torque Rating Nm	Overload Torque Rating Nm	Max. Speed rpm	Note 3								Axial Misalignment		Note 5 Angular Misalignment	
						Mass		Moment of Inertia MR ²		Note 4				Max. Per Coupling ± mm	Equivalent Axial Force N	Max Angle Deg	Restoring Moment Nm/Deg
						Trans- mission Unit only	Additional Spacer Length	Trans- mission Unit only	Additional Spacer Length	Membrane Pack	Trans- mission Unit	Spacer Tube					
						kg	kg/m	kgm ²	kgm ² /m	q1 MNm/rad	q2 MNm/rad	q3 MNm/rad	T mm				
HSLE-0074	127	1216	1824	2128	14200	6.1	8.3	0.008	0.005	0.14	0.05	0.05	70	1.4	650	0.375	18
HSLE-0096	270	2575	3863	4507	12000	8.8	10.5	0.018	0.011	0.28	0.10	0.12	81	1.9	970	0.375	34
HSLE-0115	475	4531	6797	7930	10300	12.7	15.8	0.039	0.026	0.51	0.19	0.26	90	2.3	1310	0.375	55
HSLE-0139	793	7572	11358	13251	9000	18.7	21.8	0.078	0.053	0.92	0.35	0.54	102	2.7	1830	0.375	90
HSLE-0159	1210	11558	17337	20226	7700	25.3	25.3	0.149	0.083	1.39	0.54	0.85	119	3.1	2340	0.375	135
HSLE-0179	1686	16097	24145	28169	6900	33.6	31.9	0.254	0.133	2.03	0.82	1.37	133	3.5	2930	0.375	190
HSLE-0200	2378	22706	34060	39736	6300	43.3	41.0	0.404	0.216	2.82	1.2	2.22	148	3.9	3620	0.375	265
HSLE-0220	3110	29703	44554	51979	5600	57.1	49.5	0.678	0.321	3.74	1.6	3.31	149	4.3	4350	0.375	345
HSLE-0240	4081	38973	58459	68202	5200	67.7	54.2	0.959	0.419	4.85	2.1	4.32	161	4.6	5160	0.375	450
HSLE-0262	5190	49561	74341	86731	4800	83.4	64.2	1.400	0.597	6.33	2.8	6.16	176	5.1	6120	0.375	580
HSLE-0283	6604	63060	94590	110355	4500	100.8	76.3	1.934	0.814	7.99	3.5	8.39	186	5.5	7120	0.375	725
HSLE-0320	9617	91832	137748	160706	4100	132.2	100.9	3.172	1.383	11.64	5.3	14.25	207	6.3	9080	0.375	1040
HSLE-0357	13390	127862	191793	223759	3600	186.5	119.5	5.957	2.052	16.45	7.6	21.15	239	6.8	11270	0.375	1480
HSLE-0409	20076	191709	287564	335491	3200	259.2	156.1	10.572	3.553	24.53	11.5	36.61	272	7.9	14760	0.375	2180
HSLE-0449	26538	253420	380130	443484	3000	319.6	192.4	15.411	5.311	31.97	15.0	54.74	290	8.6	17770	0.375	2910
HSLE-0485	33419	319124	478686	558467	2800	399.7	221.6	22.760	7.175	39.82	18.8	73.94	312	9.4	20700	0.375	3600
HLE-0115	671	6406	9609	11210	10300	15.9	22.3	0.042	0.035	0.73	0.27	0.36	90	1.5	1730	0.25	105
HLE-0139	1109	10588	15882	18529	9000	21.8	28.7	0.085	0.069	1.32	0.49	0.71	102	1.9	2490	0.25	180
HLE-0159	1727	16492	24739	28862	7700	31.0	38.7	0.168	0.123	1.98	0.78	1.27	119	2.1	3210	0.25	265
HLE-0179	2432	23226	34839	40645	6900	40.1	47.0	0.281	0.192	2.90	1.2	1.98	133	2.4	4030	0.25	380
HLE-0200	3340	31890	47835	55808	6300	50.2	56.5	0.441	0.292	4.03	1.7	3.01	148	2.6	4980	0.25	525
HLE-0220	4493	42906	64360	75086	5600	65.5	68.5	0.731	0.435	5.35	2.3	4.49	149	2.9	5970	0.25	680
HLE-0240	5772	55120	82680	96460	5200	78.7	79.3	1.042	0.603	6.93	3.0	6.22	161	3.1	7050	0.25	890
HLE-0262	7528	71887	107830	125802	4800	96.3	93.8	1.518	0.856	9.04	3.9	8.82	176	3.5	8330	0.25	1130
HLE-0283	9319	88992	133489	155737	4500	116.3	113.1	2.095	1.185	11.42	5.1	12.21	186	3.8	9650	0.25	1415
HLE-0320	13786	131642	197463	230374	4100	150.9	145.1	3.424	1.951	16.63	7.5	20.11	207	4.3	12200	0.25	2000
HLE-0357	19254	183860	275789	321754	3600	211.6	178.4	6.393	3.003	23.50	10.8	30.95	239	4.6	15030	0.25	2875
HLE-0409	28816	275175	412763	481556	3200	293.2	234.7	11.462	5.235	35.05	16.4	53.95	272	5.4	19490	0.25	4160
HLE-0449	38097	363796	545694	636643	3000	361.4	279.0	16.623	7.564	45.67	21.4	77.95	290	5.8	23280	0.25	5530
HLE-0485	47322	451891	677837	790809	2800	449.2	324.3	24.371	10.330	56.89	26.9	106.45	312	6.5	26980	0.25	6750
HTLE-0179	3143	30008	45012	52515	6900	47.6	64.3	0.313	0.254	3.63	1.5	2.62	133	1.7	5070	0.2	660
HTLE-0200	4297	41029	61543	71800	6300	58.1	74.6	0.486	0.377	5.03	2.1	3.88	148	1.9	6280	0.2	920
HTLE-0220	5707	54494	81741	95364	5600	76.5	94.1	0.808	0.583	6.68	2.8	6.01	149	2.1	7540	0.2	1185
HTLE-0240	7475	71379	107069	124913	5200	91.6	109.1	1.149	0.807	8.66	3.7	8.32	161	2.2	8910	0.2	1575
HTLE-0262	9640	92052	138078	161091	4800	109.9	124.7	1.660	1.113	11.30	5.0	11.47	176	2.5	10550	0.2	1985
HTLE-0283	12064	115204	172806	201607	4500	131.6	148.2	2.274	1.515	14.27	6.3	15.61	186	2.7	12230	0.2	2490
HTLE-0320	17661	168654	252980	295144	4100	171.0	193.0	3.726	2.532	20.79	9.4	26.10	207	3.1	15490	0.2	3495
HTLE-0357	24764	236474	354711	413830	3600	239.0	243.6	6.922	3.992	29.37	13.6	41.13	239	3.2	19110	0.2	5135
HTLE-0409	36894	352308	528461	616538	3200	323.9	307.0	12.237	6.704	43.81	20.5	69.09	272	3.8	24820	0.2	7360
HTLE-0449	48657	464642	696963	813124	3000	403.2	370.3	17.945	9.829	57.09	26.9	101.29	290	4.1	29690	0.2	9855
HTLE-0485	60603	578718	868077	1012756	2800	495.9	423.5	26.115	13.223	71.12	33.6	136.27	312	4.6	34430	0.2	11900

TYPE H-LE/H-LA

H SERIES HIGH PERFORMANCE COUPLINGS

HSLE/HLE/HTLE Dimensional Data (metric)

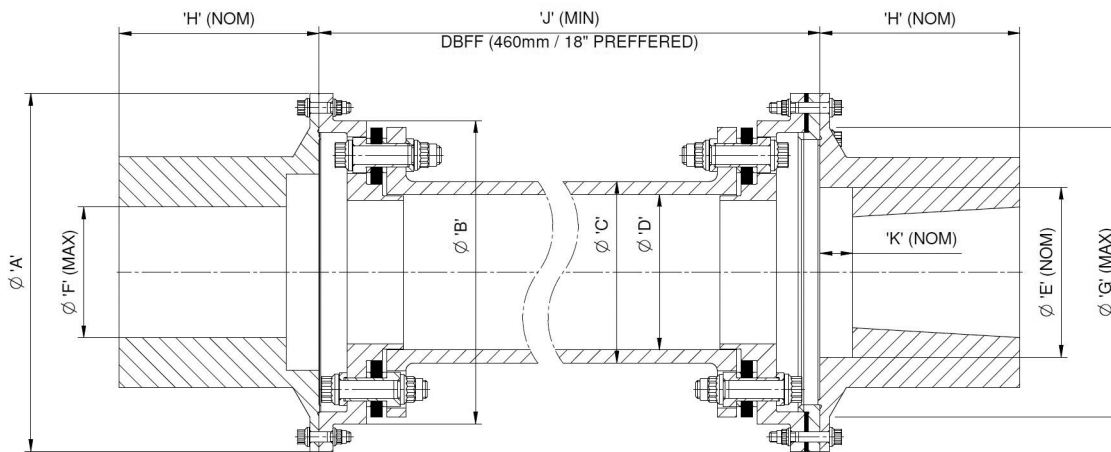
Coupling Designation	A	B	C	D	E (Nom)	F* (Max)	G	H (Nom)	J (Min)	K (Nom)
HSLE-0074	134	95	55	41	82	70	95	63	131	10
HSLE-0096	159	120	72	59	107	90	120	81	147	13
HSLE-0115	184	144	88	72	128	110	144	99	156	13
HSLE-0139	212	172	107	89	156	130	172	117	187	15
HSLE-0159	245	197	123	105	180	150	197	135	208	15
HSLE-0179	274	222	139	119	204	170	222	153	228	20
HSLE-0200	299	248	156	133	228	190	248	171	247	25
HSLE-0220	339	272	173	148	250	210	272	189	258	25
HSLE-0240	363	297	188	163	275	225	297	203	274	25
HSLE-0262	390	324	206	179	302	240	324	216	320	25
HSLE-0283	417	348	221	191	326	260	348	234	331	25
HSLE-0320	457	390	251	216	366	290	390	261	357	30
HSLE-0357	523	438	280	243	410	330	438	297	417	35
HSLE-0409	586	500	322	280	472	370	500	333	481	40
HSLE-0449	627	544	355	308	514	390	544	351	512	45
HSLE-0485	680	590	384	334	558	430	590	387	533	50
HLE-0115	184	144	90	67	128	110	5.7	144	156	13
HLE-0139	212	172	109	85	156	130	6.9	172	187	15
HLE-0159	245	197	126	98	180	150	7.6	197	208	15
HLE-0179	274	222	142	112	204	170	8.8	222	228	20
HLE-0200	299	248	159	127	228	190	9.5	248	247	25
HLE-0220	339	272	176	141	250	210	10.7	272	258	25
HLE-0240	363	297	192	155	275	225	11.4	297	274	25
HLE-0262	390	324	210	170	302	240	13	324	320	25
HLE-0283	417	348	226	181	326	260	13.7	348	331	25
HLE-0320	457	390	256	205	366	290	15.2	390	357	30
HLE-0357	523	438	286	230	410	330	17.1	438	417	35
HLE-0409	586	500	329	265	472	370	19.8	500	481	40
HLE-0449	627	544	362	293	514	390	21.3	544	512	45
HLE-0485	680	590	392	318	558	430	23.6	590	533	50
HTLE-0179	275	222	145	103	204	170	222	187	228	20
HTLE-0200	300	248	162	119	228	190	248	209	247	25
HTLE-0220	340	272	180	131	250	210	272	231	258	25
HTLE-0240	364	297	196	144	275	225	297	248	274	25
HTLE-0262	391	324	214	160	302	240	324	264	320	25
HTLE-0283	418	348	230	170	326	260	348	286	331	25
HTLE-0320	458	390	261	192	366	290	390	319	357	30
HTLE-0357	524	438	292	214	410	330	438	363	417	35
HTLE-0409	586	500	335	250	472	370	500	407	481	40
HTLE-0449	628	544	369	276	514	390	544	429	512	45
HTLE-0485	681	590	399	301	558	430	590	473	533	50

*Maximum bore 'F' is for guidance only and assumes a rectangular keyway. Does not apply to hydraulically fitted hubs.

TYPE H-LE/H-LA

H SERIES HIGH PERFORMANCE COUPLINGS

Typical Arrangement



1. This limit applies to a maximum of 5,000 cycles in the life of the coupling
2. The overload torque capacity applies to extreme conditions, such as generator short circuit torque. Following such an overload, the coupling must be inspected
3. All technical data based on 460 mm DBSE or minimum DBSE where this greater
4. To calculate transmission unit torsional stiffness:
 $1/Q_t = 2/q_1 + 1/q_3$ MNm/rad

Where: Q_t = Torsional stiffness of transmission unit
 q_1 = Torsional stiffness of one membrane pack
 q_3 = Torsional stiffness of spacer tube per m
 $L = (\text{D.B.S.E} - \text{"T"}) / 1,000$ m

To calculate coupling torsional stiffness: $1/Q_c = 2/q_1 + 1/q_3 + 1/q_4 + 1/q_5$ MNm/rad

Where: Q_c = Torsional stiffness of coupling
 q_4 = Torsional stiffness of driver shaft penetration
 q_5 = Torsional stiffness of driven shaft penetration

5. Maximum angular misalignment per disc pack (see misalignments capacities)
6. A minimum service factor of 1.5 is recommended (see selection procedure)

TYPE H-LE/H-LA

H SERIES HIGH PERFORMANCE COUPLINGS

HSLE/HLE/HTLE Technical Data (imperial)

Coupling Designation	Coupling Rating	Continuous Torque Rating	Note 1		Max. Speed	Note 3				Note 4				Axial Misalignment		Note 5	
			Peak Torque Rating	Overload Torque Rating		Mass		Moment of Inertia MR ²		Membrane Pack	Trans-mission Unit	Spacer Tube		Max. Per Coupling	Equivalent Axial Force	Angular Misalignment	
			lbf in x10 ³	lbf in x10 ³		Trans-mission Unit only	Additional Spacer Length	Trans-mission Unit only	Additional Spacer Length			Per metre	T			Max Angle	Restoring Moment
			lbf in x10 ³	lbf in x10 ³		lb	lb /in	lb /in ²	lb /in ² /in	q1	q2	q3	in	± in	lbf	Deg	lbf in/Deg
HSLE-0074	17.0	10.8	16.1	18.8	14200	13.51	0.46	27.0	0.4	1.24	0.40	0.01	2.76	0.06	146	0.375	159
HSLE-0096	36.2	22.8	34.2	39.9	12000	19.3	0.59	61.2	1.0	K	0.85	0.03	3.19	0.07	218	0.375	301
HSLE-0115	63.7	40.1	60.2	70.2	10300	27.9	0.88	132.9	2.3	4.51	1.66	0.06	3.54	0.09	295	0.375	487
HSLE-0139	106	67	101	117	9000	41.2	1.22	266	4.6	8.14	3.12	0.12	4.02	0.11	412	0.375	797
HSLE-0159	162	102	153	179	7700	55.7	1.41	511	7.2	12.3	4.81	0.19	4.69	0.12	527	0.375	1195
HSLE-0179	226	142	214	249	6900	73.8	1.78	868	11.5	18.0	7.23	0.31	5.24	0.14	659	0.375	1682
HSLE-0200	319	201	301	352	6300	95.2	2.29	1381	18.7	25.0	10.42	0.50	5.83	0.15	815	0.375	2345
HSLE-0220	417	263	394	460	5600	125.6	2.77	2317	27.9	33.1	14.1	0.74	5.87	0.17	979	0.375	3053
HSLE-0240	547	345	517	604	5200	149.0	3.03	3277	36.4	42.9	18.4	0.97	6.34	0.18	1161	0.375	3983
HSLE-0262	695	439	658	768	4800	183.4	3.59	4784	51.8	56.0	24.4	1.38	6.93	0.20	1377	0.375	5133
HSLE-0283	885	558	837	977	4500	222	4.26	6609	70.7	70.7	31.3	1.89	7.32	0.22	1602	0.375	6416
HSLE-0320	1289	813	1219	1422	4100	291	5.64	10839	120.0	103	46.7	3.20	8.15	0.25	2043	0.375	9204
HSLE-0357	1794	1132	1697	1980	3600	410	6.68	20356	178.1	145.6	67.0	4.75	9.41	0.27	2536	0.375	13098
HSLE-0409	2690	1697	2545	2969	3200	570	8.72	36127	308.4	217.1	101.4	8.23	10.71	0.31	3321	0.375	19293
HSLE-0449	3556	2243	3364	3925	3000	703	10.75	52662	461.0	283	132.9	12.31	11.42	0.34	3998	0.375	25754
HSLE-0485	4478	2824	4236	4942	2800	879	12.38	77775	622.8	352	166.3	16.6	12.28	0.37	4658	0.375	31860
HLE-0115	89.9	56.7	85.0	99.2	10300	35.0	1.25	143.9	3.0	6.46	2.35	0.08	3.54	0.06	389	0.25	929
HLE-0139	149	94	141	164	9000	47.9	1.60	291	6.0	11.7	4.38	0.16	4.02	0.07	560	0.25	1593
HLE-0159	231	146	219	255	7700	68.2	2.16	573	10.7	17.5	6.9	0.29	4.69	0.08	722	0.25	2345
HLE-0179	326	206	308	360	6900	88.2	2.63	960	16.7	25.7	10.4	0.45	5.24	0.09	907	0.25	3363
HLE-0200	448	282	423	494	6300	110	3.16	1507	25.3	35.7	14.8	0.68	5.83	0.10	1121	0.25	4646
HLE-0220	602	380	570	665	5600	144	3.83	2498	37.8	47	20.0	1.01	5.87	0.11	1343	0.25	6018
HLE-0240	773	488	732	854	5200	173	4.43	3561	52.3	61	26.3	1.4	6.34	0.12	1586	0.25	7877
HLE-0262	1009	636	954	1113	4800	212	5.24	5187	74.3	80.0	34.9	1.98	6.93	0.14	1874	0.25	10001
HLE-0283	1249	788	1181	1378	4500	256	6.32	7159	102.9	101.1	44.8	2.74	7.32	0.15	2171	0.25	12523
HLE-0320	1847	1165	1748	2039	4100	332.0	8.11	11700	169.3	147.2	66.62	4.52	8.15	0.17	2745	0.25	17700
HLE-0357	2580	1627	2441	2848	3600	465.5	9.97	21846	260.7	208.0	95.9	6.96	9.41	0.18	3382	0.25	25444
HLE-0409	3861	2435	3653	4262	3200	645.1	13.12	39168	454.4	310.2	145.2	12.13	10.71	0.21	4385	0.25	36816
HLE-0449	5105	3220	4829	5634	3000	795.2	15.59	56804	656.5	404.2	189.7	17.52	11.42	0.23	5238	0.25	48941
HLE-0485	6341	3999	5999	6999	2800	988	18.12	83280	896.6	503	237.7	23.9	12.28	0.26	6071	0.25	59738
HTLE-0179	421	266	398	465	6900	104.7	3.59	1071	22.0	32.1	13.10	0.59	5.24	0.07	1141	0.2	5841
HTLE-0200	575.8	363.1	544.7	635.4	6300	127.8	4.17	1660.8	32.7	44.52	18.52	0.87	5.83	0.07	1413	0.2	8142
HTLE-0220	765	482	723	844	5600	168	5.26	2759	50.6	59	25.2	1.35	5.87	0.08	1697	0.2	10487
HTLE-0240	1001.7	631.7	947.6	1105.5	5200	201.6	6.10	3926.7	70.0	76.64	33.16	1.87	6.34	0.09	2005	0.2	13939
HTLE-0262	1292	815	1222	1426	4800	241.9	6.97	5672	96.6	100.0	43.9	2.58	6.93	0.10	2374	0.2	17567
HTLE-0283	1617	1020	1529	1784	4500	289	8.28	7771	131.5	126	56.1	3.51	7.32	0.11	2752	0.2	22037
HTLE-0320	2367	1493	2239	2612	4100	376.2	10.78	12732	219.8	184.0	83.57	5.87	8.15	0.12	3485	0.2	30931
HTLE-0357	3318.4	2092.8	3139.2	3662.4	3600	525.9	13.61	23653.5	346.5	259.92	120.46	9.25	9.41	0.13	4300	0.2	45445
HTLE-0409	4944	3118	4677	5456	3200	713	17.16	41816	581.9	388	181.8	15.53	10.71	0.15	5585	0.2	65136
HTLE-0449	6520	4112	6168	7196	3000	887.0	20.69	61322	853.1	505.2	237.7	22.77	11.42	0.16	6680	0.2	87217
HTLE-0485	8121	5122	7682	8963	2800	1091	23.67	89240	1147.7	629	297.5	30.6	12.28	0.18	7747	0.2	105315

TYPE H-LE/H-LA

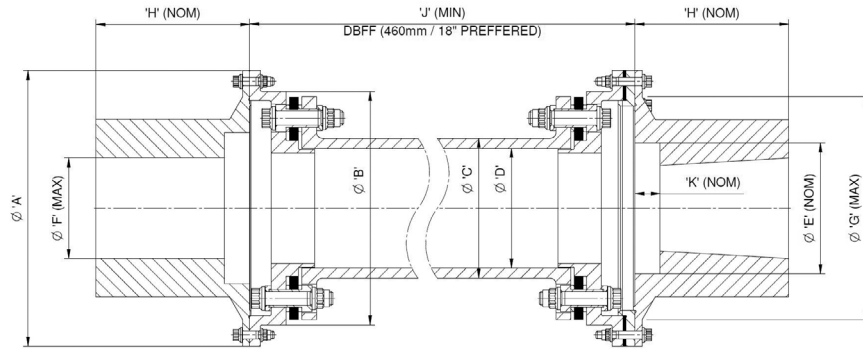
H SERIES HIGH PERFORMANCE COUPLINGS

HSLE/HLE/HTLE Dimensional Data (imperial)

Coupling Designation	A	B	C	D	E (Nom)	F* (Max)	G	H (Nom)	J (Min)	K (Nom)
HSLE-0074	5.28	3.74	2.17	1.61	3.23	2.76	3.74	2.48	5.16	0.39
HSLE-0096	6.26	4.72	2.83	2.32	4.21	3.54	4.72	3.19	5.79	0.51
HSLE-0115	7.24	5.67	3.46	2.83	5.04	4.33	5.67	3.90	6.14	0.51
HSLE-0139	8.35	6.77	4.21	3.50	6.14	5.12	6.77	4.61	7.36	0.59
HSLE-0159	9.65	7.76	4.84	4.13	7.09	5.91	7.76	5.31	8.19	0.59
HSLE-0179	10.79	8.74	5.47	4.69	8.03	6.69	8.74	6.02	8.98	0.79
HSLE-0200	11.77	9.76	6.14	5.24	8.98	7.48	9.76	6.73	9.72	0.98
HSLE-0220	13.35	10.71	6.81	5.83	9.84	8.27	10.71	7.44	10.16	0.98
HSLE-0240	14.29	11.69	7.40	6.42	10.83	8.86	11.69	7.99	10.79	0.98
HSLE-0262	15.35	12.76	8.11	7.05	11.89	9.45	12.76	8.50	12.60	0.98
HSLE-0283	16.42	13.70	8.70	7.52	12.83	10.24	13.70	9.21	13.03	0.98
HSLE-0320	17.99	15.35	9.88	8.50	14.41	11.42	15.35	10.28	14.06	1.18
HSLE-0357	20.59	17.24	11.02	9.57	16.14	12.99	17.24	11.69	16.42	1.38
HSLE-0409	23.07	19.69	12.68	11.02	18.58	14.57	19.69	13.11	18.94	1.57
HSLE-0449	24.69	21.42	13.98	12.13	20.24	15.35	21.42	13.82	20.16	1.77
HSLE-0485	26.77	23.23	15.12	13.15	21.97	16.93	23.23	15.24	20.98	1.97
HLE-0115	7.24	5.67	3.54	2.64	5.04	4.33	0.22	5.67	6.14	0.51
HLE-0139	8.35	6.77	4.29	3.35	6.14	5.12	0.27	6.77	7.36	0.59
HLE-0159	9.65	7.76	4.96	3.86	7.09	5.91	0.30	7.76	8.19	0.59
HLE-0179	10.79	8.74	5.59	4.41	8.03	6.69	0.35	8.74	8.98	0.79
HLE-0200	11.77	9.76	6.26	5.00	8.98	7.48	0.37	9.76	9.72	0.98
HLE-0220	13.35	10.71	6.93	5.55	9.84	8.27	0.42	10.71	10.16	0.98
HLE-0240	14.29	11.69	7.56	6.10	10.83	8.86	0.45	11.69	10.79	0.98
HLE-0262	15.35	12.76	8.27	6.69	11.89	9.45	0.51	12.76	12.60	0.98
HLE-0283	16.42	13.70	8.90	7.13	12.83	10.24	0.54	13.70	13.03	0.98
HLE-0320	17.99	15.35	10.08	8.07	14.41	11.42	0.60	15.35	14.06	1.18
HLE-0357	20.59	17.24	11.26	9.06	16.14	12.99	0.67	17.24	16.42	1.38
HLE-0409	23.07	19.69	12.95	10.43	18.58	14.57	0.78	19.69	18.94	1.57
HLE-0449	24.69	21.42	14.25	11.54	20.24	15.35	0.84	21.42	20.16	1.77
HLE-0485	26.77	23.23	15.43	12.52	21.97	16.93	0.93	23.23	20.98	1.97
HTLE-0179	10.83	8.74	5.71	4.06	8.03	6.69	8.74	7.36	8.98	0.79
HTLE-0200	11.81	9.76	6.38	4.69	8.98	7.48	9.76	8.23	9.72	0.98
HTLE-0220	13.39	10.71	7.09	5.16	9.84	8.27	10.71	9.09	10.16	0.98
HTLE-0240	14.33	11.69	7.72	5.67	10.83	8.86	11.69	9.76	10.79	0.98
HTLE-0262	15.39	12.76	8.43	6.30	11.89	9.45	12.76	10.39	12.60	0.98
HTLE-0283	16.46	13.70	9.06	6.69	12.83	10.24	13.70	11.26	13.03	0.98
HTLE-0320	18.03	15.35	10.28	7.56	14.41	11.42	15.35	12.56	14.06	1.18
HTLE-0357	20.63	17.24	11.50	8.43	16.14	12.99	17.24	14.29	16.42	1.38
HTLE-0409	23.07	19.69	13.19	9.84	18.58	14.57	19.69	16.02	18.94	1.57
HTLE-0449	24.72	21.42	14.53	10.87	20.24	15.35	21.42	16.89	20.16	1.77
HTLE-0485	26.81	23.23	15.71	11.85	21.97	16.93	23.23	18.62	20.98	1.97

*Maximum bore 'F' is for guidance only and assumes a rectangular keyway. Does not apply to hydraulically fitted hubs.

Typical Arrangement



1. This limit applies to a maximum of 5,000 cycles in the life of the coupling
2. The overload torque capacity applies to extreme conditions, such as generator short circuit torque. Following such an overload, the coupling must be inspected
3. All technical data based on 18" DBSE or minimum DBSE where this greater
4. To calculate transmission unit torsional stiffness: $1/Q_t = 2/q_1 + 1/q_3$ lbf in/rad $\times 10^6$

Where: Q_t = Torsional stiffness of transmission unit
 q_1 = Torsional stiffness of one membrane pack
 q_3 = Torsional stiffness of spacer tube per m
 L = (D.B.S.E - "T") in

To calculate coupling torsional stiffness: $1/Q_c = 2/q_1 + 1/q_3 + 1/q_4 + 1/q_5$ lbf in/rad $\times 10^6$

Where: Q_c = Torsional stiffness of coupling
 q_4 = Torsional stiffness of driver shaft penetration
 q_5 = Torsional stiffness of driven shaft penetration

5. Maximum angular misalignment per disc pack (see misalignments capacities)
6. A minimum service factor of 1.5 is recommended (see selection procedure)

HP Couplings Selection Procedure

1. Select the appropriate service factor (SF) from the table below

***Note: The minimum service factor required for API 671 applications is 1.5.**

Duty	Driving Machine	Driven Machine	Service Factor
Constant Torque	Turbine or electric motor (inc. via gearbox)	Centrifugal Pump or Compressor	1.5
		Generator	1.5
Fan or Screw Compressor		2.25	
Reciprocating pump or compressor		Min. 3♣	
Substantial torque fluctuation	Reciprocating engine	All	Min. 3♣

♣ For reciprocating equipment a minimum SF of 3 must be applied however John Crane should be consulted for specific equipment SF defined by number of cylinders & torque profile.

For API 671 applications a reduced service factor of 1.2 can be applied by mutual consent – Contact John Crane for recommendations.

2. Calculate the coupling rating (R) from;

$$R = \frac{KW \times 1000 \times SF}{N} \quad \text{or} \quad R = \frac{HP \times 100 \times SF}{N}$$

Where KW = rated power for the drive equipment (kW)
 HP = rated power for the drive equipment (HP)
 N = Normal operating Speed (rpm)

3. Select a coupling with equal or greater power rating than that calculated from the data tables
4. Check maximum hub bores will accommodate shaft sizes
5. Check maximum speed, misalignment and peak torque capacity are suitable for the application

***Note: If the required maximum speed cannot be accommodated consider a smaller diameter HLE or HTLE design**

***Note: If the required misalignment cannot be achieved consider a more flexible HLE or HSLE design**

6. Check the coupling selected will fit within the required shaft separation (DBSE)

Where a large axial displacement capacity is required to accommodate equipment thermal growth couplings may be installed in a prestretch condition.

If the requirements for your application cannot be met with the data provided in this document contact John Crane to discuss further possible solutions.

Ke- Experience Factor

John Crane recommends an experience factor (K_e) to reduce the service factor below 1.5.

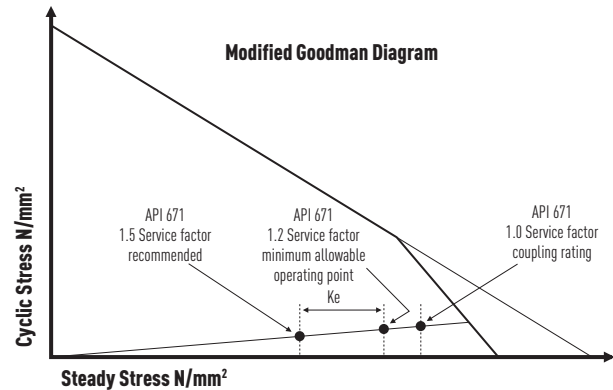
In accordance with API 671:

A lower service factor (1.2 minimum) can be used by mutual consent should weight and or overhung moment of the selected coupling fail to be commensurate to the rotor dynamics.

Refer to:

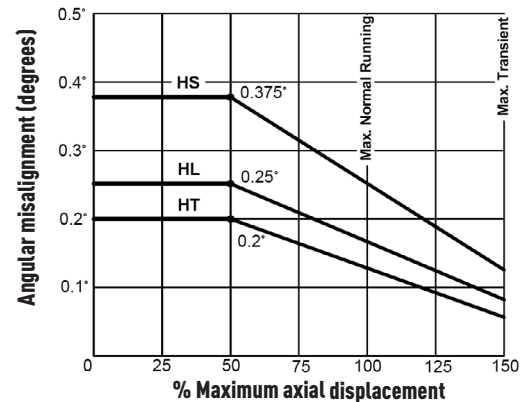
API 671

EN ISO 10441



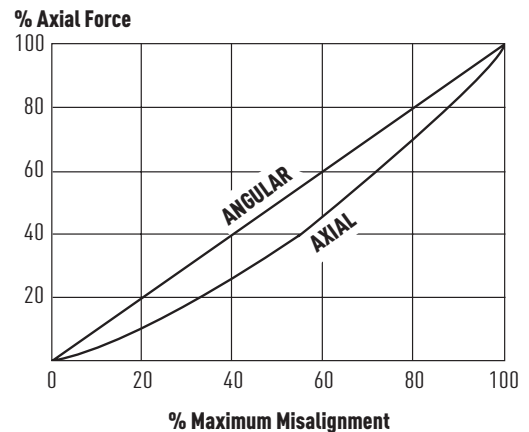
Angular Misalignment vs. Axial Displacement

Axial and angular misalignment have a combined effect on the flexible membrane stresses. Therefore, a reduction in one permits an increase in the other. The trade-off is shown in the graph. Transient or short-term misalignment limits are also shown in this graph, and are usually applicable to the high thermal growths often caused during start up and shut down of turbine drives. A detailed review of a coupling selection may require consideration of the relative casing and shaft expansions on such applications. Couplings can be installed with initial axial pre-stretch to allow their continuous operation at lower displacements.



Restoring Force vs. Displacement

The axial and angular restoring forces can be calculated from the data given in the tables and the graph opposite. The axial load characteristic makes the coupling resistant to axial resonance. The nonlinear characteristic detunes the system, preventing high amplitudes of vibration. John Crane can provide full details of the axial response curves upon request.



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If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated. ISO 9001 and ISO14001 Certified, details available on request.