Drexler Motorsport
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Projekt :
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Beschreibung : Komm.Nr:

INVOLUTE SPLINE ANSI B92.1

ANSI B92.1 - FILLET ROOT SIDE FIT
Welle ANSI B92.1 EXTERNAL SPLINE PITCH 24.00/48.00, 45.0°
Nabe ANSI B92.1 INTERNAL SPLINE PITCH 24.00/48.00, 45.0°

Zeichnungs- oder Artikelnummer:
Welle: 0.000.0
Nabe: 0.000.0

1. TOOTH GEOMETRIE

DRAWING DATA for ANSI B92.1 - 1996

Spline Pitch (1/in)	[P/Ps]	24.00/ 48.00	
Circular Pitch (in)	[p]	0.1309	
Pressure angle (°)	[Psi]	45.000	
		External Spline Data	Internal Spline Data
Number of teeth	[N]	25	-25
Pitch diameter (in, mm)	[D]	1.0417 (26.458)	1.0417 (26.458)
Base diameter (in, mm)	[Db]	0.7366 (18.709)	0.7366 (18.709)
Major diameter external (in, mm)	[Do]	1.0830-1.0780	(27.508-27.381)
Minor diameter internal (in, mm)	[Di]	1.0170-1.0220	(25.832-25.959)
Minor diameter external (in, mm)	[Dre]	0.9905-0.9855	(25.158-25.031)
Major diameter internal (in, mm)	[Dri Max.]	1.1095 (28.182)	
Tolerances (in, mm)	[Tol.Dri]	0.0000/0.0050 (0.000/0.127)	
(Tolerances are not explicitly defined, values for Mayor diameter fit are shown)			
Form diameter (in, mm)	[DFe,DFi]	1.0127 (25.722)	1.0873 (27.618)

Data for Actual Dimensions (ANSI B92.1)			
Base tangent length (in)	[tmax/min, smax/min]	0.07182/0.07004	0.07913 /0.07658
Tooth thickness (mm)	[tmax/min, smax/min]	1.824 / 1.779	2.010 / 1.945
Data for Effective Dimensions (ANSI B92.1)			
Tooth thickness (in)	[tvmax/min, svmax/min]	0.07378/0.07200	0.07633 /0.07378
Tooth thickness (mm)	[tvmax/min, svmax/min]	1.874 / 1.829	1.939 / 1.874

DATA FOLLOWING ISO-STANDARDS:

Normal module (mm)		[mn]	1.0583	
Helix angel	(°)	[beta]	0.0000	
Tooth thickness (mm)		[b]	30.00	30.00

Material
Axle: 18CrNiMo7-6 (1) (>=28HRC core), case-hardened steel
DIN 3990-5 pic 4a/4b (MQ), core strength >=28HRC
Hub: 18CrNiMo7-6 (1) (>=28HRC core), case-hardened steel
DIN 3990-5 pic 4a/4b (MQ), core strength >=28HRC

		------- axle	hub --------
Surface hardness		HRC 61	HRC 61
Dedendum reference profile (module	[hfP]	0.65	0.65
Tooth root radius refer. profile (module)	[rofP]	0.32	0.32
Addendum reference profile (module)	[haP]	0.40	0.40
Protuberance high (module)	[hk]	0.00	0.00
Protuberance angle (°)	[alfPro]	0.00	0.00

Real module (mm)	[mt]	1.058
Pressure angle at pitch diameter (°)	[alft]	45.000
Base helix angle (°)	[betab]	0.000
Total of addendum modification	[Summexi]	0.0000

		------- axle	hub --------
Addendum modification coefficient	[x]	0.1000	-0.1000

Tip diameter (mm)		[da]	27.517	-25.823
Eff. Tip diamenter (mm)		[da.e/i]	27.508 / 27.381	-25.832 / -25.959
Tolerances tip diameter (mm)		[Ada.e/i]	-0.008 / -0.135	-0.009 / -0.136
Root diameter (mm)		[df]	25.294	-28.046
Eff. root diameter (mm)		[df.e/i]	25.158 / 25.031	-28.182 / -28.309
Depth of tooth (mm)		[H]	1.111	1.111
Clearance theoretical (mm)		[c]	0.265	0.265
Clearance effective (mm)		[c.e/i]	0.464 / 0.337	0.464 / 0.337
Normal-Tooth thickness on tip cylinder (mm)		[san]	0.827	0.804
	(mm)	[san.e/i]	0.968 / 0.789	0.938 / 0.749
Normal-gap width on root cylinder	(mm)	[efn]	0.300	0.257
	(mm)	[efn.e/i]	0.176 / 0.104	0.105 / 0.031
Reference circle pitch (mm)		[pt]	3.325	
Base circle pitch (mm)		[pbt]	2.351	
Real intervention pitch (mm)		[pet]	2.351	

2. INSPECTION OF TOOTH THICKNESS

		axle	hub
Gear tooth quality		6	7
Tooth thickness tolerance		ANSI B92.1	ANSI B92.1
No. of teeth over which to measure	[k]	7.000	-7.000
Shunt circuit diameter (mm)	[dMWk]	26.985	-26.985
Pitch free of clearance (mm)	[Wk]	19.446	-19.446
Pin diameter (in,mm)		0.1083 (2.750)	0.0984 (2.500)
Dimension over rolls (mm)	[Me/Mi-pin]	31.497	-22.186

Data for Actual Dimensions (ANSI B92.1)

Tooth thickness / gap width (mm)	[tmax/min, smax/min]	1.824/1.779	2.010/1.945
Tooth thickness deviation			
Normal section (mm)	[As.max/min]	-0.050 / -0.095	-0.071 / -0.136
Base tangent length (mm)	[Wk.Smax/min]	19.411 / 19.379	
Dimension over rolls (in)	[Me/Mi-pin]	1.238 / 1.237	0.876 / 0.879
Dimension over rolls (mm)	[Me/Mi-pin]	31.450 / 31.408	22.263 / 22.333
Circumferential backlash (transverse section) (mm)	[jt]	0.231 / 0.121	
Normal back lash (mm)	[jn]	0.163 / 0.085	

3. TOLERANCES

		WHEEL 1	WHEEL 2
INVOLUTE SPLINE ANSI B92.1			
Quality of gear tooth system	[Vqual]	6	7
Machining Tolerance (in/10000)	[m]	17.80	25.50
Variation Allowance (in/10000)	[lamda]	19.60	28.00
Total Index Variation (in/10000)	[TIV]	21.00	30.00
Profile Variation (MAX) (in/10000)	[PVmax]	2.80	4.00
Profile Variation (MIN) (in/10000)	[PVmin]	-5.60	-8.00
Lead Variation (in/10000)	[LV]	5.60	8.00

5. ADDITIONAL DATA

Torque of inertia (System based of wheel 1):
Calculation without allowance of the exactly tooth form

Wheels apart	((da+df)/2...di) (kgm²)	[TraeghMom]	1.098e-005	1.989e-005
System	((da+df)/2...di) (kgm²)	[TraeghMom]	3.088e-005	

9. PRODUCTION

Inexistent data

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