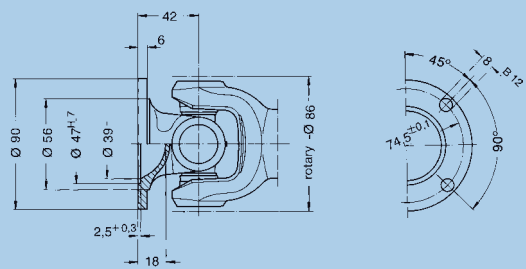


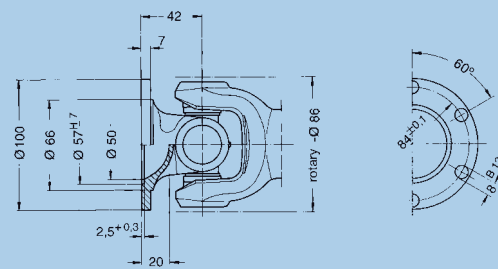
Needle bearing version

At utilisation of the nominal torque a verification of the flange connection is necessary.

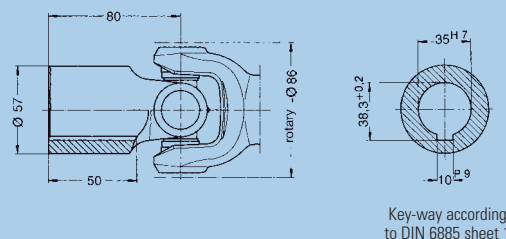
One keyway is not enough to transmit the max. torque. In such case a second keyway or an internal spline is recommended.



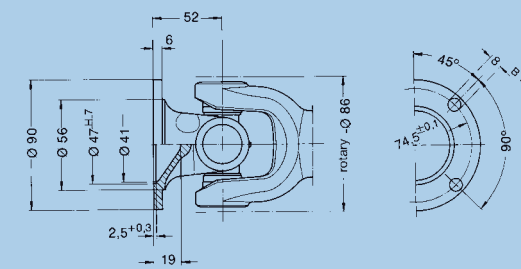
On both sides standard flange end number: 0.109.XX0



On both sides larger flange end number: 0.109.XX1



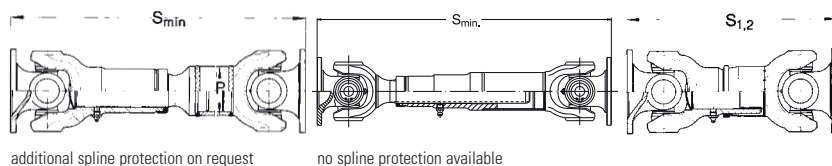
On both sides connecting hub without key-way end number: 0.109.XX2 with key-way end number: 0.109.XX3



On both sides flange for larger angle deflection end number: 0.109.XX5

β* = Maximum angle of deflection per joint
 J_m = Moment of inertia
 G = Weight
 S_{min} = Minimum length of tubular types
 S₁ = Compressed lengths
 S₂ = of short types
 X₁ = Extension at S_{min} resp. S₁
 X₂ = Extension at S₂
 P₁ = Tube diameter. Dimensions in bold type for normal applications. Alternative dimensions are for long shafts at high speeds, see technical annex domain speed
 P₂ = Alternative tube
 P₃

Universal Cardan Drive-Shafts with extension

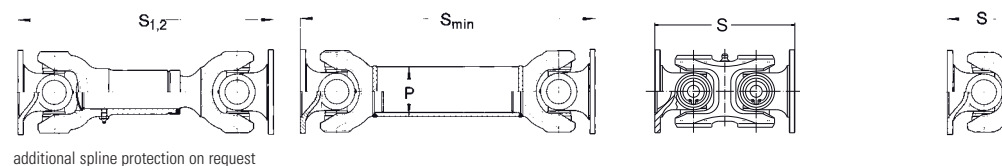


additional spline protection on request

no spline protection available

Cardan Drive-Shafts without extension

Universal Joints without extension



additional spline protection on request

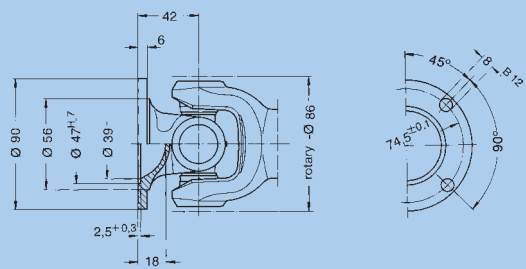
Please indicate requested length „S“ and max. r.p.m. when ordering!

Order number	Tubular Type normal extension				Tubular Type larger extension				Short Type I		
	0.109.100	0.109.101	0.109.102	0.109.105	0.109.110	0.109.111	0.109.112	0.109.115	0.109.130	0.109.131	0.109.132
Angle of deflection β*	20	18	20	35	20	18	20	35	20	18	20
Flange-Ø	90	100	Hub	90	90	100	Hub	90	90	100	Hub
S _{min} resp. S ₁	348	348	423	375	393	393	468	425	225	225	301
S ₂	-	-	-	-	-	-	-	-	250	250	326
X resp. X ₁	40	40	40	40	80	80	80	80	25	25	25
X ₂	-	-	-	-	-	-	-	-	40	40	40
P ₁	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	-	-	-
P ₂	70 x 3	70 x 3	70 x 3	70 x 3	70 x 3	70 x 3	70 x 3	70 x 3	-	-	-
P ₃	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	-	-	-
Spline dim. DIN 5480	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14
Number of flange holes	4	6	-	4	4	6	-	4	4	6	-
J _m (at S _{min} resp. S ₁)	0,00249	0,00286	0,00267	0,00281	0,00259	0,00296	0,00277	0,00291	0,00221	0,00258	0,00239
J _m (at S ₂)	-	-	-	-	-	-	-	-	0,00226	0,00263	0,00244
J _m /100 mm standard tube	0,00014	0,00014	0,00014	0,00014	0,00014	0,00014	0,00014	0,00014	-	-	-
G (at S _{min} resp. S ₁)	4,91	5,12	5,68	5,10	5,41	5,61	6,18	5,71	3,80	4,00	4,57
G (at S ₂)	-	-	-	-	-	-	-	-	4,11	4,31	4,88
G/100 mm standard tube	0,24	0,24	0,24	0,24	0,24	0,24	0,24	0,24	-	-	-

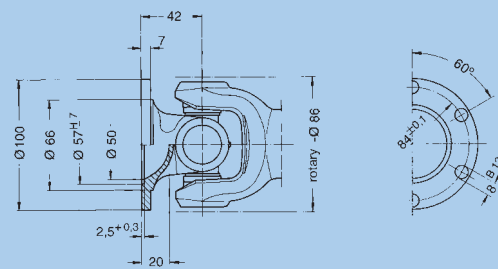
* Please refer to point 6.7 of the technical attachment

Short Type II				Tubular Type				Universal Joint Double			Universal Joint Single			
0.109.140	0.109.141	0.109.142	0.109.145	0.109.200	0.109.201	0.109.202	0.109.205	0.109.300	0.109.301	0.109.302	0.109.400	0.109.401	0.109.402	0.109.405
20	18	20	35	20	18	20	35	20	18	20	20	18	20	35
90	100	Hub	90	90	100	Hub	90	90	100	Hub	90	100	Hub	90
280	280	356	315	216	216	291	235	152	152	228	84	84	160	104
310	310	386	345	-	-	-	-	-	-	-	-	-	-	-
40	40	40	40	-	-	-	-	-	-	-	-	-	-	-
40	40	40	40	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	50 x 2	50 x 2	50 x 2	50 x 2	-	-	-	-	-	-	-
-	-	-	-	70 x 3	70 x 3	70 x 3	70 x 3	-	-	-	-	-	-	-
-	-	-	-	80 x 4	80 x 4	80 x 4	80 x 4	-	-	-	-	-	-	-
32x2x14	32x2x14	32x2x14	32x2x14	-	-	-	-	-	-	-	-	-	-	-
4	6	-	4	4	6	-	4	4	6	-	4	6	-	4
0,00238	0,00275	0,00256	0,00270	0,00239	0,00276	0,00257	0,00239	0,00166	0,00299	0,00184	0,00075	0,0011	0,00093	0,00107
0,00256	0,00293	0,00274	0,00288	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	0,00014	0,00014	0,00014	0,00014	-	-	-	-	-	-	-
4,22	4,43	5,00	4,58	3,73	3,94	4,50	3,88	3,02	3,23	3,79	1,71	1,92	2,49	1,87
4,38	4,59	5,15	4,66	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	0,24	0,24	0,24	0,24	-	-	-	-	-	-	-

At utilisation of the nominal torque a verification of the flange connection is necessary.

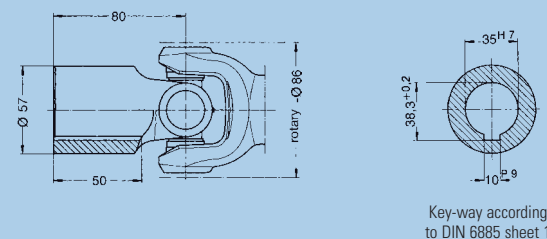


Standard flange
end number: 0.109.XX0

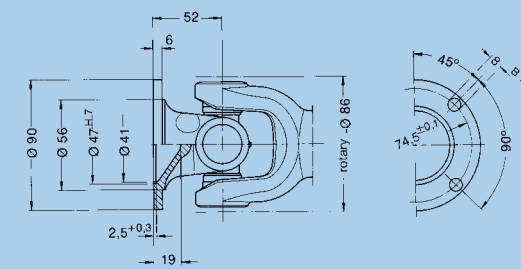


Larger flange
end number: 0.109.XX1

One keyway is not enough to transmit the max. torque. In such case a second keyway or an internal spline is recommended.

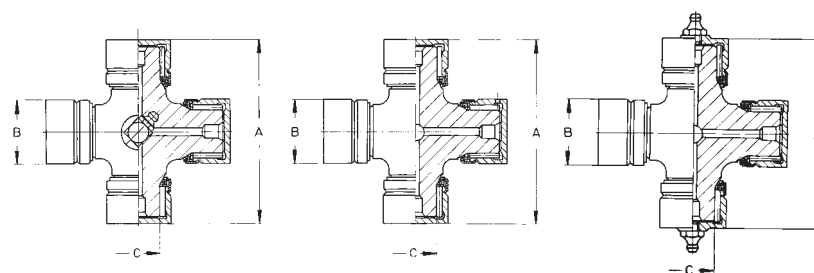


Connecting hub
without key-way end number: 0.109.XX2
with key-way end number: 0.109.XX3



Flange for larger deflection
end number: 0.109.XX5

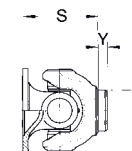
Cross Units, Needle bearing version



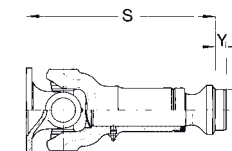
	Standard version Needle bearing	Lubrication for Version 0.100.3XX Needle bearing	Version suitable for external lubrication Needle bearing
Order number	0.109.010	0.109.011	0.109.012
A	70,9	70,9	70,9
B	28,5	28,5	28,5
C	19,87	19,87	19,87
Snap rings included	J 29 x 1,2	J 29 x 1,2	J 29 x 1,2
Weight	0,508	0,504	0,66

β* = Maximum angle of deflection per joint
X = Preferred extension (larger extension available up to approx. 9 x spline o. D.)

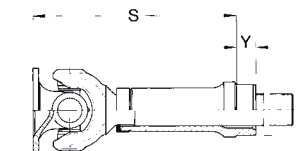
Fixed joint



Slip joint



Slip joint (sliding sleeve type)



Please indicate compressed length „S“, extension and required type of flange when ordering!

	Needle bearing version											
	without extension				standard extension				larger extension			
Order number	0.109.050	0.109.051	0.109.052	0.109.055	0.109.060	0.109.061	0.109.062	0.109.065	0.109.070	0.109.071	0.109.072	0.109.075
Angle of deflection β*	20	18	20	35	20	18	20	35	20	18	20	35
Weight	1,82	1,93	2,21	1,90	3,01	3,12	3,40	3,12	3,39	3,50	3,78	3,61
Flange-Ø	90	100	Hub	90	90	100	Hub	90	90	100	Hub	90
S	90	90	128	100	225	225	263	242	222	222	260	241
X	-	-	-	-	40	40	40	40	80	80	80	80
Y	14	14	14	14	15	15	15	15	18	18	18	18
Z	46,25	46,25	46,25	46,25	46,25	46,25	46,25	46,25	46,25	46,25	46,25	46,25
Spline dim. DIN 5480	-	-	-	-	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14	32x2x14
Number of flange holes	4	6	-	4	4	6	-	4	4	6	-	4

* Please refer to point 6.7 of the technical attachment.

The dimensions Z, Y and S will be changed within a product change. Please contact us for further questions.