

S



 DISTRIBUIDOR
 MEX (55) 53 63 23 31
 MTY (81) 83 54 10 18

 AUTORIZADO
 QRO (442) 1 95 72 60
 ventas@industrialmagza.com

In-house development Own manufacturing Sole distributor in Germany Working with distributors worldwide



hydraulic actuated products

> EP: 0 812 397 EP: 1 666 748



Overview

Hydraulic shrink disc SHS





Standard





Test stand



Wind energy



Naval (with class approvals)





Customized

Hydraulic rigid flange coupling







C

Content	Page
Overview	2
Description of function SHS	4
Product data SHS	4
Versions	5
SHS Standard	6
SHS Test stand	8
SHS Marine (with class approvals)	10
SHS Wind energy	11
SHS Customized	12
Product questionnaire SHS	13
Description of function FKH	14
Product data FKH	14
FKH Rigid flange coupling	15
Product questionnaire FKH	16
Further products	19





AUTORIZADO

Description of function SHS

Shrink discs of the type SHS

The main function of a shrink disc is the safe connection of a shaft with a hub by means of friction. For example, between a drive shaft and a transmission hollow shaft. The shrink disc generates a backlash-free connection by pressing the hub onto the shaft. This connection is mainly used to transmit torque.

The shrink disc only provides the required forces, and transfers no forces or moments between shaft and hub by itself. It is not in the force flow.

It is installed by sliding the shrink disc onto the hollow shaft and the subsequent tightening of the hydraulik system. By using conical surfaces the inner diameter reduces and the radial pressure is built up. After clamping the SHS will be locked mechanically and the hydraulic pressure will be removed. Due to this simple approach the SHS is suitable for repetitive clamping operations as they occur on a test bench, for example.

Advantages of the SHS:

- application-specific design/customization •
- relatively low pressure
- very rapid tightening / loosening, in comparison to the mechanical shrink disc ٠
- mechanically removably, partially mechanically tensionable when hydraulic is not available
- simple design based on 3-parts shrink disc
- maintenance/repairs carried out by customer •

To achieve proper operation and to a sufficiently high coefficient of friction, the contact surfaces between shaft and hub must be free of grease, dry and clean. The functional surfaces of the shrink disc are equipped at the factory with lubricant. The contact surfaces between the hub and shrink disc must also be provided with grease before installation.

Product data SHS

Data sheets and CAD data

Our hydraulically tensible shrink discs are selected according to customer specifications or been redesigned. For this purpose please fill in the questionnaire (see page 15) and send it to info@tas-schaefer.de.





Versions

Hydraulics on the front



Hydraulics on the back







SHS Standard



Typical fields of application	Industrial gearboxes Hollow shaft gearboxes Hydraulic motors
Nominal sizes	140 - 1.000 mm
Nominal torques	20 - 10.000 kNm
Pressure range	up to 180 bar
Versions	Hydraulic on the front Bolting on both sides
Features	simple design
Options	improved corrosion protection

SHS Test stand

Typical fields of application	Gearbox test stands
Nominal sizes	140 - 1.000 mm
Nominal torques	20 - 14.000 kNm
Pressure range	up to 200 bar (up to 400 bar for dismounting)
Versions	Hydraulic on the front or on the back Bolting on both sides or on the front
Features	Optimized for permanent operation reduced wear higher safety simplified handling and maintenance Application specific customization
Options	improved corrosion protection

SHS Test stand

SHS Marine (with class approvals)

Typical fields of application	shafting
Nominal sizes	140 - 800 mm
Nominal torques	14 - 2.800 kNm
Pressure range	up to 200 bar up to 400 bar (dismounting)
Versions	Hydraulic on the front Hydraulic on the back Bolting on both sides Bolting on the front
Features	wide design reduced surface pressure high safety Application specific customization full class approvals
Options	hydraulic dismounting

SHS Wind energy

Typical fields of application	Main rotor shaft Generator shaft
Nominal sizes	140 - 1.000 mm
Nominal torques	20 - 12.000 kNm
Pressure range	up to 200 bar
Versions	Hydraulic on the front Hydraulic on the back Bolting on both sides Bolting on the front
Features	special corrosion protection Application specific customization
Options	-

SHS Customized

Typical fields of application	Crusher Mills Shredder etc.
Nominal sizes	100 - 1.000 mm
Nominal torques	10 - 12.000 kNm
Pressure range	up to 200 bar up to 400 bar (dismounting)
Versions	Hydraulic on the front or on the back Bolting on both sides or on the front
Features	Application specific customization
Options	By arrangement and engineering viability

Dimensioning outside clamping shaft / hub connection

(Shrinkdisc)

Company	Date	TAS Schäfer GmbH
Adress		Osterfeldstraße 75 58300 Wetter (Ruhr)
Contact person	Department	Germany
Phone	FAX	⁽¹⁾ ⊕ +49 (0) 2335 9781-0
E-Mail		 E-Mail: info@tas-schaefer.de
Project-No		

In order to allow us an accurate assessment / design, please fill in all the known data.

If you are able to provide us a drawing, a sketch or similar, please send us such known information too.

Load configuration:	Device type:	
Motor power p [kW]	🔵 Туре 30	x l.
Speed at LSS n [min ⁻¹]	🔵 Туре 31	
Safety factor SF	SHS (hydraulic)	
Nominal torque M_t [Nm]	Customized	
Max. torque M_{tmax} [Nm]]	
Max. add. radial load F _{rad} [N]	Environment:	
Max. add. bending moment M_b [Nm]	corrosive	
Max. add. axial load F_{ax} [N]	Dust	
Operation time [%]	Temperature range	
Number of starts [n/t]	[°C]	
		$D_A D d_W D_b -$
Geometric details:		
Nominal diameter D [mm] Tolerance	Rz	
Shaft diameter d_w [mm] Tolerance	Rz	· · · · · · · · · · · · · · · · · · ·
Bore in the shaft D_b [mm]		
Max. clamping length / [mm] Max. install.	length I, [mm]	
Max. diameter D_A [mm] available	space x [mm]	
Materials: Designation $R_e/R_{p0,2}$ [MPa]	E-Modulus [MPa]	
Shaft		
Hub		

Comments: (coatings, environmental conditions, number of tensions, special requests, etc. ...)

This form is also available on our website at - www.tas-schaefer.de

AUTORIZADO

Description of function FKH

Rigid flange couplings of the type FKH

The main function of a hydraulic flange coupling (hereinafter called FKH) is the safe connection of two shafts. For example, between a drive shaft and a transmission shaft. The FKH produces a rigid and backlash-free connection between the shafts. This connection is mainly used to transmit torque, but can also absorb bending moments. The FKH is located in the power flow.

It is installed by sliding the FKH onto the shaft and the subsequent tightening of the hydraulic system. By using conical surfaces the inner diameter reduces and the radial pressure is built up. After clamping the FKH will be locked mechanically and the hydraulic pressure will be removed. Due to this simple approach, the FKH is suitable for repetitive clamping operations.

Advantages of the FKH:

- high transmittable torque and bending moments (high friction)
- application-specific design/customization •
- easy mounting and adjustment because of clearance fit •
- relatively low pressure (closed system) •
- very rapid tightening/loosening
- simple design (single cone) •
- short installation length
- also usable for shafts with keyway (should be filled) •
- combination of different shaft diameters

To achieve proper operation and to a sufficiently high coefficient of friction, the contact surfaces between shaft and FKH must be free of grease, dry and clean. The functional surfaces of the FKH are equipped at the factory with lubricant.

Product data FKH

Data sheets and CAD data

Our hydraulically tensible rigid flange couplings are selected according to customer specifications or been redesigned. For this purpose please fill in the questionnaire (see pages 18/19) and send it to info@tas-schaefer.de.

FKH Rigid flange coupling

Typical fields of application	Conveyor drives Agitator shaft	
Nominal sizes	70 - 500 mm	
Nominal torques	6 - 2.500 kNm	
Pressure range	up to 400 bar	
Versions	standard design heavy design	
Features	short installation length high stability tensionable from the shaft side desired shaft stepping closed hydraulic system mechanical lock	
Options	improved corrosion protection	
		-locking screw

Dimensioning of Rigid Coupling Design FK/FKH - - -

(Shaft - Connection)

Company	Date	TAS Schäfer GmbH
Address		Osterfeldstraße 75
Contact	Department	58300 Wetter (Ruhr) —— Germany
Phone	FAX	
E-Mail		 — +49 (0) 2335 72956 — E-Mail: info@tas-schaefer.de
Reference		

In order to allow us an accurate evaluation / design, please fill in all the known data.

If you are able to provide us a drawing, a sketch or similar, please send us such known information too.

Loads:		X	(1	X ₂
Motor power	p [kW]			
Motor speed	<i>n</i> [min ⁻¹]		- 2	
Transmission ratio	i			
Drive speed	<i>n</i> [min ⁻¹]			
Nominal torque	<i>M</i> _t [Nm]			
Max. torque	M _{t max} [Nm]	+ + (
Safety factor	SF	d _{W1} D _{b1}		$D_{b2} d_{W2}$
Nominal braking torque	<i>M</i> _{br} [Nm]	• • (Shaft 1 Shaft 2	
Holdback torque	<i>M</i> _{rh} [Nm]			
Operation time	[%]			
Number of starts	[n/t]	Example		
Geometric details:				
Shaft 1 / Flange 1 (male)				
Shaft diameter d_{WI} [mm]	Tolerance	Rz	Device type:	Environment:
Bore in the shaft D_{b1} [mm]			FK standard	corrosive
Material R _e /R _p	_{0,2} [MPa] E-Modulu	ıs [MPa]	○ FK type "B"	Dust
Max. clamping length I_1 [mm]			FKH (hydraulic)	Temperature range
available space x_1 [mm]			Customized	[°C]
Shaft 2 / Flange 2 (female)			(for a "flying" drive, use sheet 2	please)
Shaft diameter d_{W2} [mm]	Tolerance	Rz		static dynamic
Bore in the shaft D_{b2} [mm]			Max. bending moment M_b [Nr	n]
Material B/B	[MPa] F-Modulu	is [MPa]	Max radial load E.	N]
naterial nev np(
Max. clamping length I_2 [mm]			Max. axial load F_{ax} [N]
Max. clamping length I_2 [mm] available space x_2 [mm]			Max. axial load F_{ax} [N]

Comments: (coatings, environmental conditions, number of tensions, special requirements, etc. ...)

This form is also available on our website at - www.tas-schaefer.de

×,

		AUTOHIZADO	QHO (442) 1 95 72 60 Ventas@industriaimayza.com
TAS SCHÄFER	Dimensioning of Rig (Shaft - Connection)	jid Coupling Desig	gn FK/FKH Sheet 2/2
Company Address Reference		Date	TAS Schäfer GmbH Osterfeldstraße 75 58300 Wetter (Ruhr) Germany
Using a "flying" drive (ty rotational direction and calculation completely!	pical arrangement for conveyor drives), I type of torque support are very import	creates bending moment. Inform ant to evaluate the bending load	ation about weight, COG, torque-arm, s. All information is needed to do this
ZS	CCW CW CCW CW FG C barycenter	Z LGy L 	drive-shaft support
torque su	pport	-X	2

Example

Drivetrain mass	F _G [N]	Direction of rotation:
Shaft extension	/ [mm]	O CW (clockwise)
		O CCW (counterclockwise)
Position of barycenter (COG)	<i>lGx</i> [mm] <i>lGy</i> [mm] <i>lGz</i> [mm]	O CW/CCW (both directions)
	min	
	max. ⁽¹⁾	Torque support design:
Position torque support	lsx [mm] lsy [mm] lsz [mm]	⊖ fixed
	min	⊖ flexible
⁽¹⁾ only if variable	max. (1) (1)	🔘 variable
Angle of drivetrain	a [°] alterable from to	Backstop:
Eurthan dataile) without
		 at drive
Rigidity of torque support		 not at drive
Enabled movement	X± [mm] Y± [mm]	
Shaft bending under load	β [minute]	Brake:
Max. shaft run-out (manufacturing):	radial [mm] angle [minute]	○ without
xamples for toraue support mountina	 at drive 	
,		

This form is also available on our website at - www.tas-schaefer.de

Further products from our company

TAS 110

TAS 130

TAS 131

Locking assemblies

TAS 3003

TAS 3006

TAS 3012

TAS 3013

TAS 3015

TAS 4006

TAS 3014

Shrink disc in two-part design

TAS 3173

TAS 3171, 3181, 3191, 3193

Shaft couplings

TAS W

TAS WK

TAS WLA

TAS WLB

TAS AFS

Flange couplings

DISTRIBUIDOR MEX (55) 53 63 23 31 MTY (81) 83 54 10 18 AUTORIZADO QRO (442) 1 95 72 60 ventas@industrialmagza.com

TAS Schäfer GmbH Osterfeldstraße 75 58300 Wetter (Ruhr) Telefon: +49 (0) 2335 9781-0 FAX: +49 (0) 2335 72956 E-Mail: info@tas-schaefer.de Internet: www.tas-schaefer.de