

Sprockets for Top Chains / Idlers for Top Chains / Top Chains

Feature: Plate is flat and wide. Workpiece can be put directly on plate for conveyance. Suitable for the condition when the workpieces accumulate.

Sprockets for Top Chains

TPSP

Shaft Bore Specification for Sprocket

Shaft bore nominal	d	b	t	Recommended shafts
25	24.9	8	3.4	Ø25 _{g9}
30	29.9	8	3.4	Ø30 _{g9}
40	39.9	12	3.4	Ø40 _{g9}

Material:
Sprockets: Glass Reinforced Nylon

Idlers for Top Chains

TPDR

Shaft Bore Specification for Idler

Shaft bore nominal	d	Recommended shafts
25	25.3	Ø25 _{g9}
30	30.3	Ø30 _{g9}
40	40.3	Ø40 _{g9}

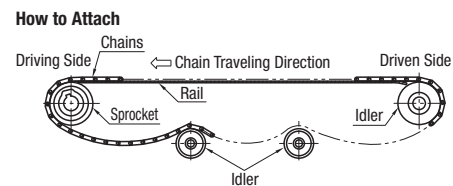
Material:
Idler: Glass Reinforced Nylon

Top Chains

TPCH

Operating Temperature:
Dry condition: -40°C~+90°C
Wet condition: -40°C~+60°C

Material: Chain: Low Friction Polyacetal
Pin: 430 Stainless Steel



Chemical Resistance Good: Resistant Acceptable: Partly Resistant Poor: Not Resistant

Chemical Name	Temp. (20°C)	Temp. (60°C)	Chemical Name	Temp. (20°C)	Temp. (60°C)
Acetic Acid: 5% or More	Acceptable	Poor	Chromic Acid 50%	Poor	Poor
Acetic Acid: Less than 5%	Good	—	Chromic Acid 3%	Acceptable	Acceptable
Acetone	Acceptable	Acceptable	Citric Acid	Good	Poor
Alcohol (All Types)	Good	Acceptable	Orange Juice	Good	—
Ammonia	Good	Good	Coconut Oil	Good	—
Aniline	—	Acceptable	Corn Oil	Good	—
Beer	Good	—	Cotton Oil	Good	—
Benzene	Acceptable	Acceptable	Neutral Detergent	Good	—
Soft drinks	Good	Good	Diethyl Ether	Acceptable	Acceptable
Salt water 10%	Good	Good	Acetic Ether	Acceptable	Poor
Butter	Good	—	Ethylene Glycol	Good	Acceptable
Carbon Tetrachloride	Good	Acceptable	Iron Compounds	Acceptable	Poor
Cheese	Good	—	Formaldehyde	Good	Good
Chlorine gas	Poor	Poor	Chlorofluorocarbon	Acceptable	Acceptable
Liquefied chlorine	Poor	Poor	Heavy Oil	Acceptable	Acceptable
Chlorine Water 0.4%	Poor	Poor	Fruit Juice	Good	—
Chlorobenzene	Acceptable	Acceptable	Gasoline	Good	Good
Chloroform	Poor	Poor	Glucose	Good	Good
Chocolate	Good	—	Heptane	Good	Good

Sprockets

Part Number	Shaft Bore Diameter d	D	P.D.
TPSP	25 30 40	128.9 142.0 153.8	129.9 141.2 153.2

Part Number Example TPSP21 - 25

Idlers

Part Number	Shaft Bore Diameter d	D
TPDR	25 30 40	130.0 142.5 154.5

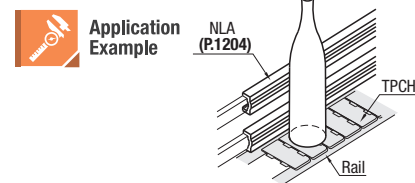
Part Number Example TPDR23 - 30

Chains

Part Number	No. of Links Specified	W	Max. Allowable Tension (kN)	Mass (kg/m)	Number of Links per Unit
TPCH	826 1143	82.6 114.3	1.65	0.85 1.03	160 (Circumference Length 6,096 mm)

- ① The chain can be made longer than 360 links by connecting them with a pin included.
- ② Sprockets and Idlers are common for either types of Chains.
- ③ For Top Chain selection information materials and Frictional Coefficient Table, refer to P.3968.
- ④ When a chain is longer than 160 links, the package is as follows:
Ex.) TPCH826-240, 2 separate packages: 160 links + 80 links
Ex.) TPCH826-350, 3 separate packages: 160 links x 2 + 60 links

Part Number Example TPCH826 - 100



Chemical Name	Temp. (20°C)	Temp. (60°C)	Chemical Name	Temp. (20°C)	Temp. (60°C)
Hexane	Good	—	Phosphoric Acid Less than 30%	Poor	Poor
Hydrobromic Acid	Poor	Poor	Potassium Hydrate	Good	Good
Hydrofluoric Acid	Poor	Poor	Potassium Iodide 3%	Good	Good
Oxygenated Water 3%	Good	Good	Seawater	Acceptable	—
Oxygenated Water 90%	Acceptable	Poor	Sodium Hydroxide 60%	Good	Good
Crystal of Iodine	Poor	Poor	Stearic Acid	Poor	Poor
Isopropyl Alcohol	Good	Good	Sulfuric Acid Less than 20%	Acceptable	—
Jet Fuel	Good	Good	Solution of Sulfate	Poor	Poor
Kerosene	Good	Good	Dilute Sulfuric Acid Less than 10%	Poor	Poor
Methyl Isobutyl Ketone	Acceptable	Acceptable	Acidum Tartaricum	Poor	Poor
Petroleum	Good	Good	Toluene	Acceptable	Acceptable
Mineral Spirits	Good	Good	Transformer Oil	Acceptable	Poor
Naphth	Good	Good	Cresyl Phosphate	Acceptable	Acceptable
Nitric Acid	Poor	Poor	Urea	Good	—
Nitrobenzene	Poor	Poor	Wine	Good	Good
Olive Oil	Good	Good	Whiskey	Good	—
Palmitin Hydrochloric Acid	Poor	Poor	Xylene	Good	Good
Peanut Oil	Good	Good			
Phenol 5% or Less	Poor	Poor			

Idler Sprockets

Single & Double Bearing

Idler Sprockets - Single & Double Bearing

RoHS 10

Single Bearing
DRC
DRCs (Stainless Steel)

① The bearing is located at the center of the sprocket.
② Nylon 6 (Black) Operating Temperature: -10~80°C

Double Bearings
DRCW

Type	Material		Surface Treatment
	Single Bearing	Double Bearings	
DRC	DRCW	1035 Carbon Steel or Equivalent (Induction Hardened Tooth Tip)	Steel or Equivalent
DRCs	—	Stainless Steel	Stainless Steel

Part Number	No.	No. of Teeth	d	Dp	Do	T	HD	L	W	Bearing Part No.	Idler Pin Applicable Type		Approximate Mass (kg/m)			Available Types																				
											Single Bearing	Double Bearing	DRC	DRCs	DRCW	DRC	DRCs	DRCW																		
25	17	6	34.56	38	2.8	12	27	12	13	606ZZ	—	—	0.04	—	—	—	—	—																		
	19	8	38.58	42						608ZZ									0.08	—	—	—	—	—	—											
	20	10	40.59	44						6900ZZ																—	—	—	—	—	—	—				
35	16	10	48.82	54	4.3	14	17	19	6000ZZ	IDP6000S	—	0.11	0.120	—	—	—	—																			
	18	15	54.85	60					6001ZZ	IDP6001S								0.10	0.110	—	—	—	—													
	21	17	63.91	69					6202ZZ	IDP6202S														0.16	0.170	—	—	—	—							
	25	20	76	81					6203ZZ	IDP6203S																				0.24	0.250	—	—	—	—	
	40	13	10	53.07					59	7.2																										14
15		15	61.08	67	6001ZZ	IDP6001S	IDP6001W	0.14	0.150		0.19	—	—	—																						
17		17	69.12	76	6202ZZ	IDP6202S									IDP6202W	0.19	0.200	0.29	—	—	—															
50	12	12	61.34	69	8.7	26				31												35	6203ZZ	IDP6203S	—	0.30	0.310	0.45	—							—
	13	15	66.34	74			6204ZZ	IDP6204S	IDP6204W		0.40	0.410	0.62	—									—	—												
	15	17	76.35	84			6201ZZ	IDP6201S							IDP6201W	0.21	0.220	0.31	—	—	—															
60	11	12	67.62	76	11.7	17	21	21		6202ZZ												IDP6202S			—	0.26	—	—	—	—	—					
	13	17	79.6	89					6203ZZ	IDP6203S	IDP6203W	0.23	0.240	0.34								—	—	—												
	14	20	85.61	95					6204ZZ	IDP6204S					IDP6204W	0.49	0.500	0.72	—	—	—															
80	9	15	74.27	85	14.6	19	21	21	6202ZZ	IDP6202S															—	0.38	—	—	—	—	—					
	10	17	82.2	93					6203ZZ	IDP6203S	IDP6203W	0.57	—	—								—	—	—												
	11	20	90.16	102					6204ZZ	IDP6204S					IDP6204W	0.69	—	—	—	—	—															

① For the target part number, if info about the applicable Idler Pins cannot be found on the table, use Cantilever Shafts instead. P.912

Part Number Example DRC50 - 13 - 15

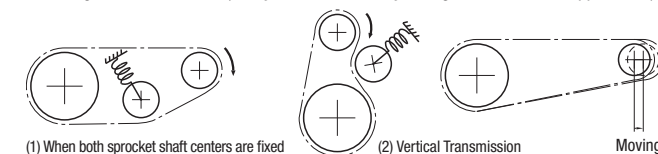
When Using Idlers

Chain elongation decreases transmission efficiency and accelerates wear, resulting in short life. Adjustment mechanism is required for the following power transmission conditions.

- The center distance between shafts is long. (In the case that the shaft center distance exceeds 30~50 times greater than used chain pitch, or 20 times or greater than chain pitch under pulsating loads)
- Relative positioning of the two sprocket shafts is exactly, or nearly, perpendicular to each other.
- Distance between both shaft centers is short, and the upper side is the chain's loose side.
- The chain length is long on multi-shaft transmission.
- The chain causes strong vibration.

There are two ways to adjust for stretch of chain:

- Installing an idler or a tensioner (when (1) the both sprocket shaft centers are fixed; (2) transmission is in vertical direction; or (3) the chain causes vibration)
- Moving either of the shafts (It may be the easiest way for regular transmission applications)



Rollers or guide rails are used as idlers in very low speed operations while sprockets are commonly used for power transmitting chains. The idler should be installed on the chain's loose side span rather than on the tense side, except otherwise needed or in applications that require reversing operation. Installing the idler on the tension side unnecessarily increases the chain tension and makes its service life shorter. Ensure that the number of teeth of idler is designed so the idler does not exceed the max. allowable speed. (Note when the number of teeth is smaller than a small sprocket, speed increases) At least 3 teeth of the idler should contact with chain.

There are several ways of idler adjustment:

- Eccentric shaft system
- Arm system
- Sliding system (Please refer to Chain Drive Mechanism P.3960)

