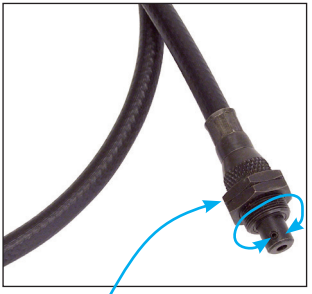
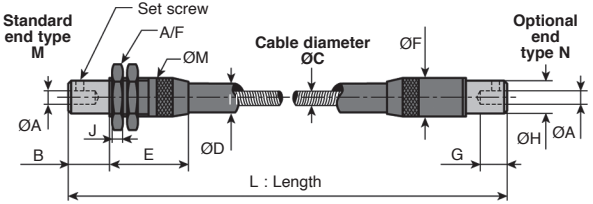
Masterflex® flexible shaft

FDSQ

Normal use

- ***Suitable for most applications due to the use of self lubricating bronze bearings in the end connectors***
- *Allows the driving and driven elements to be mounted apart*
- *Obstacles can be avoided, multiple bends possible*
- *Position of the driven element is no longer determined by the position of the driving equipment*
- *Output efficiency >95%*
- *Dampens vibration*
- *Woven wire flexible shaft*
- *Materials:*
  Wires: blackened XC25 steel
  Sheath: PVC





Dark grey areas are fixed parts.
Light grey areas are revolving parts.

Part number	ØC core	ØM	ØA	B	ØD	E	A/F	ØF	G	ØH	J	Screw
FDSQ4-L	3,80	M15x1,0	4	10	10,5	43	22	15,0	8	12,5	4	M3
FDSQ5-L	4,75	M18x1,0	5	16	14,0	50	24	18,0	12	15,5	4	M3
FDSQ6-L	6,35	M21x1,0	6	17	17,0	59	27	21,0	14	18,5	4	M4
FDSQ8-L	8,00	M22x1,5	8	23	17,5	63	30	22,0	17	18,5	4	M4
FDSQ9-L	9,52	M26,5x1,5	10	25	22,5	69	35	26,5	20	23,0	4	M5
FDSQ13-L	12,70	M29,5x1,5	15	31	25,0	84	36	29,5	24	26,0	4	M6

Dimensions in mm

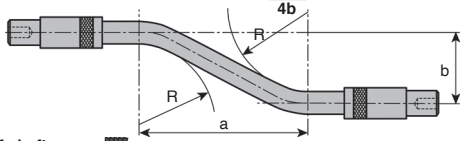
Info.

- *Replace the "L" in the part number by the length required and add the desired end (R: standard; S: optional)*
  E.g. **FDSQ4A-500RR**
- *Steel core lubricated with oil*
- *For continuous use, the shaft should be lubricated every 3 months*
- *Flexible shaft can be removed by unscrewing the knurled part. Check the sealing before re-use*
- *Delivered pre-bored*
- *The one-direction versions are no longer available*

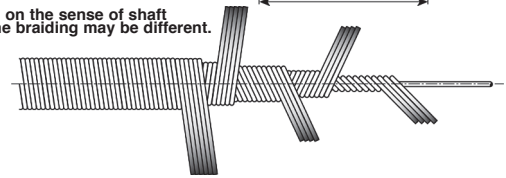
NOTE: For assembly, the end must be drilled and pinned to the connected shaft. The set screw is only there for positioning. It does not allow torque to be transmitted.

BEND RADIUS

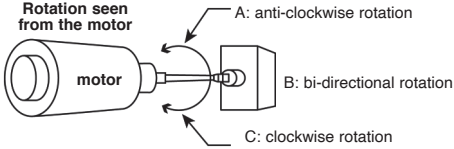
$$\text{Radius} = \frac{a^2 + b^2}{4b} \text{ (mm)}$$



Depending on the sense of shaft rotation, the braiding may be different.



Rotation seen from the motor



"L" in part number refers to length, see ***info.***

Part number anti-clockwise	bidirectional	clockwise	Price for 500 mm	Price for 1000 mm	Price for 1500 mm	Price for 2000 mm	Price for 2500 mm	Price for 3000 mm
FDSQ4A-L	FDSQ4B-L	FDSQ4C-L	On request	On request	On request	On request	On request	On request
FDSQ5A-L	FDSQ5B-L	FDSQ5C-L						
FDSQ6A-L	FDSQ6B-L	FDSQ6C-L						
FDSQ8A-L	FDSQ8B-L	FDSQ8C-L						
FDSQ9A-L	FDSQ9B-L	FDSQ9C-L						
FDSQ13A-L	FDSQ13B-L	FDSQ13C-L						

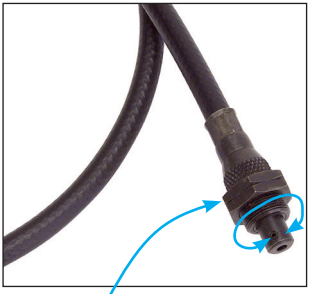
Dimensions in mm

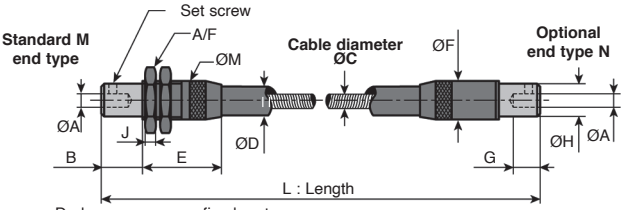
Masterflex® flexible shaft

FDS

Heavy duty applications

- ***Ball bearings in the end connectors allow for a higher speed of rotation and more intensive use.***
- *Allows the driving and driven elements to be mounted apart*
- *Obstacles can be avoided, multiple bends possible*
- *Position of the driven element is no longer determined by the position of the driving equipment*
- *Output efficiency >95%*
- *Dampens vibration*
- *Woven wire flexible shaft*
- *Materials:*
  Wires: blackened XC25 steel
  Sheath: PVC





Dark grey areas are fixed parts.
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Part number	ØC core	ØM	ØA	B	ØD	E	A/F	ØF	G	ØH	J	Screw
FDS4-L	3,80	M18 x 1,0	4	11,0	10,5	48,0	24	18	8	10,75	4	M3
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FDS6-L	6,35	M27 x 1,0	6	19,5	17,0	66,5	35	27	14	18,00	4	M4
FDS8-L	8,00	M30 x 1,5	8	24,0	17,5	68,5	36	30	17	20,50	4	M4
FDS9-L	9,52	M34 x 1,5	10	25,0	22,5	78,5	41	34	20	24,50	4	M5
FDS13-L	12,70	M38 x 1,5	15	26,5	25,0	85,5	46	38	24	28,00	4	M6
FDS16-L	16,00	M44 x 1,5	16	30,0	32,0	108,5	55	44	25	31,00	4	M6
FDS19-L	19,05	M50 x 1,5	16	31,0	31,0	114,0	60	50	25	36,50	4	M6

Dimensions in mm

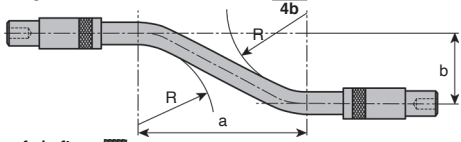
Info.

- Replace the "L" in the part number by the length required and add the desired end (M: standard; N: optional)
  E.g. **FDS4-500MM**
- Steel core lubricated with oil
- For continuous use, the shaft should be lubricated every 3 months
- Flexible shaft can be removed by unscrewing the knurled part. Check the sealing before re-use
- Delivered pre-bored
- The one-direction versions are no longer available

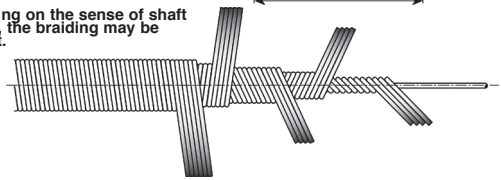
NOTE: For assembly, the end must be drilled and pinned to the connected shaft. The set screw is only there for positioning. It does not allow torque to be transmitted.

BEND RADIUS

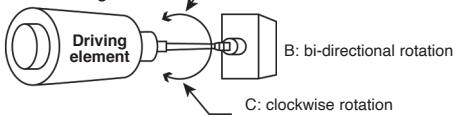
$$\text{Radius} = \frac{a^2 + b^2}{4b} \text{ (mm)}$$



Depending on the sense of shaft rotation, the braiding may be different.



Direction of rotation as seen from driving element



*"L" in part number refers to length, see **info**.*

Part number			Price for	Price for	Price for	Price for	Price for	Price for
anti-clockwise	bidirectional	clockwise	500 mm	1000 mm	1500 mm	2000 mm	2500 mm	3000 mm
FDS4A-L	FDS4B-L	FDS4C-L	On request	On request	On request	On request	On request	On request
FDS5A-L	FDS5B-L	FDS5C-L						
FDS6A-L	FDS6B-L	FDS6C-L						
FDS8A-L	FDS8B-L	FDS8C-L						
FDS9A-L	FDS9B-L	FDS9C-L						
FDS13A-L	FDS13B-L	FDS13C-L						
FDS16A-L	FDS16B-L	FDS16C-L						
-	FDS19B-L	-						

Dimensions in mm

Masterflex® flexible shaft

FDS
FDSQ

Technical information

		Min. use radius (mm) RU	Max. speed FDS (trpm)	Max. speed FDSQ	Torsion deflection depending on twist (0,1 Nm at 1 m) Same (Nm)	Torsion deflection depending on twist (0,1 Nm at 1 m) Opp. (Nm)
FDS(Q)4	B	75	3 000	200	28°	56,00°
FDS(Q)5	B	100	3 000	200	7,50°	17,00°
FDS(Q)6	B	125	3 000	200	1,50°	3,25°
FDS(Q)8	B	200	2 000	200	0,50°	0,80°
FDS(Q)9	B	200	2 000	200	0,30°	0,63°
FDS(Q)13	B	250	2 000	200	0,11°	0,20°
FDS16	B	300	1 500	-	0,06°	0,13°
FDS19	B	400	1 500	-	0,01°	0,01°

Dimensions in mm

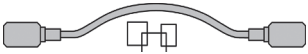
Torsion deflection depending on twist 0,1Nm for 1 meter shaft.

Bend radius (mm)		Max. torque (Nm) depending on bend radius (mm)																
		75	100	125	150	175	200	250	300	350	400	500	600	650	750	800	1000	1500
FDS(Q)4	B	0,65	1,20	1,50	1,70	1,80	1,85	1,95	2,00	2,03	2,05	2,10						
FDS(Q)5	B		1,30	1,70	2,05	2,17	2,25	2,34	2,40	2,45	2,50	2,60						
FDS(Q)6	B			4,00	5,00	6,00	7,00	8,00	9,00	9,40	9,80	10,50						
FDS(Q)8	B						10,00	12,50	14,40	15,80	16,50	17,60	18,50					
FDS(Q)9	B						13,00	17,00	20,00	23,00	24,40	26,00	27,20	28,00				
FDS(Q)13	B							23,00	32,00	41,00	45,00	49,00	51,00	51,50	53,00	53,50	56,00	
FDS16	B								20,00	28,00	31,50	36,50	40,00	41,20	43,80	45,00	50,00	
FDS19	B										40,00	50,00	60,00	62,50	65,00	66,20	70,00	75,00

Direction of rotation : B bi-directional or manual

Advantages

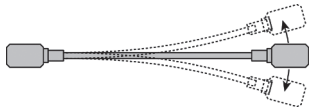
FDS
FDSQ



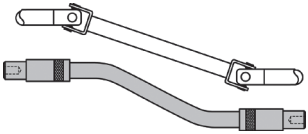
avoids obstacles

reduces vibrations

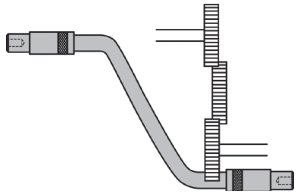
restricted access or control
at a distance



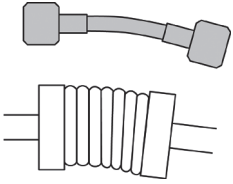
for moving parts



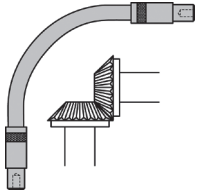
parallel misalignment



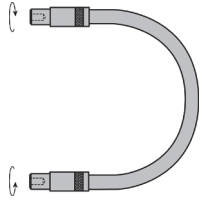
Very large parallel misalignment



angular misalignment



Redirects at 90°



change of direction