



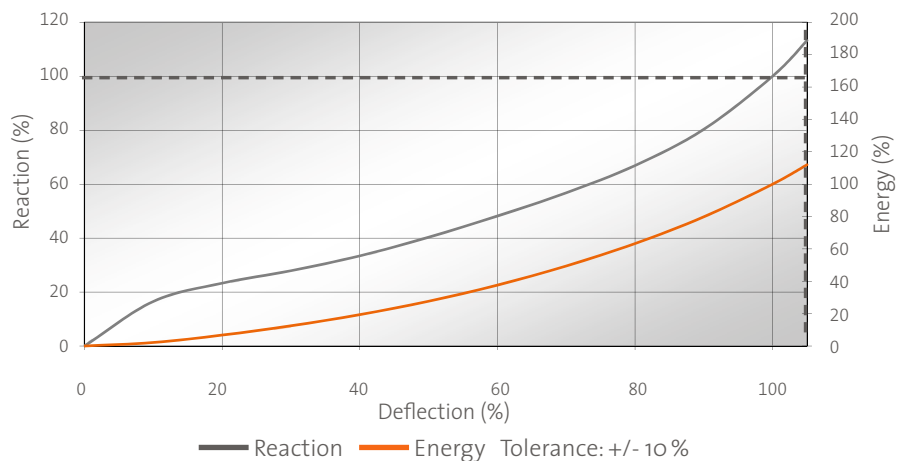
TUG BOAT FENDERS

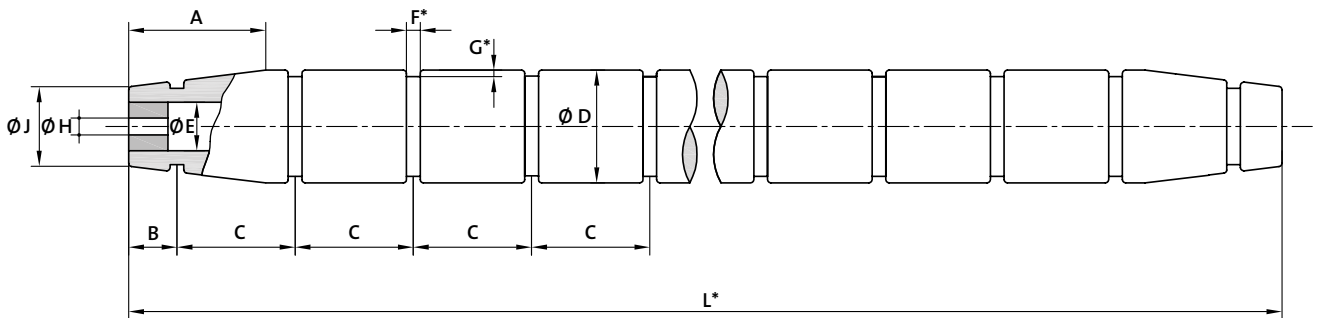
ShibataFenderTeam is able to offer a complete range of commonly used Tug Boat Fenders. This includes:

- ▶ Cylindrical bow and stern Gunwale Fenders with circumferential grooves for installation with chains or nylon straps
- ▶ W Fenders, M Fenders and Keyhole Fenders for protection at the bow and stern of vessels
- ▶ Wing-Type Fenders, D Fenders and Rectangular Fenders for vessel sides
- ▶ Komposite Fenders (moulded rubber fender with vulcanized or bolted PE rubbing face) for work boats and special tugs
- ▶ For Navy applications also available in non marking grey rubber

A complete “ready to install” fender kit including tapered ends, connecting plugs, end plugs, drill holes as well as numbered stern and bow fender sets are available. Tug Boat Fenders, especially D Fenders and Rectangular Fenders, are also often used for other applications or structures.

GENERIC PERFORMANCE CURVE CYLINDRICAL TUG BOAT FENDERS





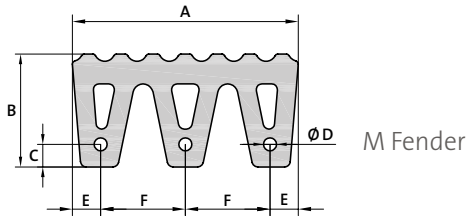
CYLINDRICAL TUG BOAT FENDER DIMENSIONS

$\varnothing D$ [mm]	B [mm]	C [mm]	A [mm]	$\varnothing E$ [mm]	$\varnothing H$ [mm]	$\varnothing J$ [mm]
200	150	530	500	100	75	150
250	200	570	500	125	75	190
300	225	600	700	150	75	225
350	250	630	800	175	100	260
400	300	670	800	200	100	300
500	300	730	900	250	100	375
600	350	800	900	300	125	450
700	350	860	1000	350	125	525
800	350	930	1000	400	125	600
900	350	1000	1100	450	150	675
1000	350	1060	1200	500	150	750

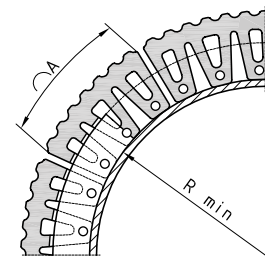
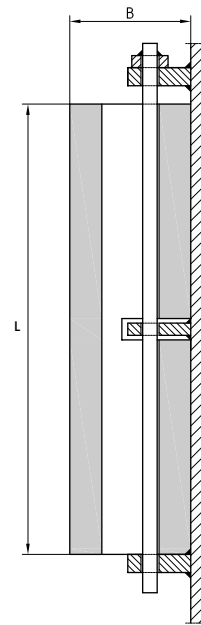
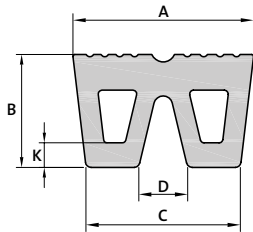
* L: 2~13 metres in one section or joined for longer length
 * F: varies in width according to size and type of circumferential attachment
 * F+G depending on size and type of fixing accessories (chain / nylon strap)

M FENDER DIMENSIONS

Type	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	ØPin [mm]	L _{max} [mm]	Weight [kg/m]
M 40	400	200	40	23	50	150	20	2000	56
M 50	500	250	50	27	60	190	24	2000	89
M 60	600	300	60	33	70	230	30	2000	132
M 80	800	400	80	44	95	305	36	2000	233



M Fender and W Fender, both available with profiled or non profiled surface.



M FENDER FIXING

Pin [mm]	Flat bar [mm]	R _{min} [mm]
Ø 20	100 x 15	450
Ø 24	125 x 20	550
Ø 30	150 x 20	650
Ø 36	180 x 25	850

W FENDER DIMENSIONS

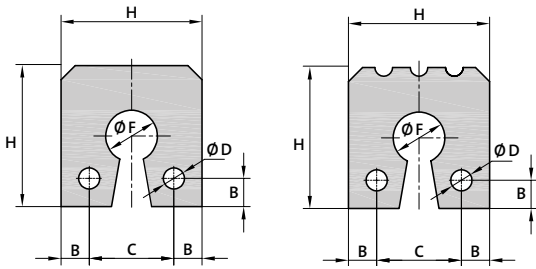
Type	A [mm]	B [mm]	C [mm]	D [mm]	K [mm]	L _{max} [mm]	Weight [kg/m]
W32	320	200	280	100	50	2000	51
W40	400	250	350	110	55	2000	81
W48	480	300	426	135	65	2000	120
W50	500	450	420	90	75	2000	180

W FENDER FIXING

Pin [mm]	Flat bar [mm]	R _{min} [mm]
Ø 25	100 x 20	600
Ø 30	120 x 20	800
Ø 40	140 x 20	900
Ø 40	150 x 20	1000



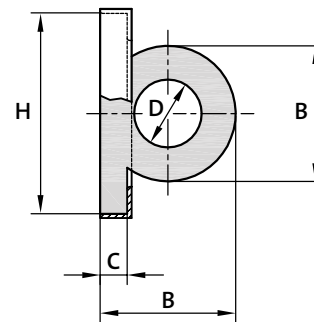
KEYHOLE FENDER DIMENSIONS



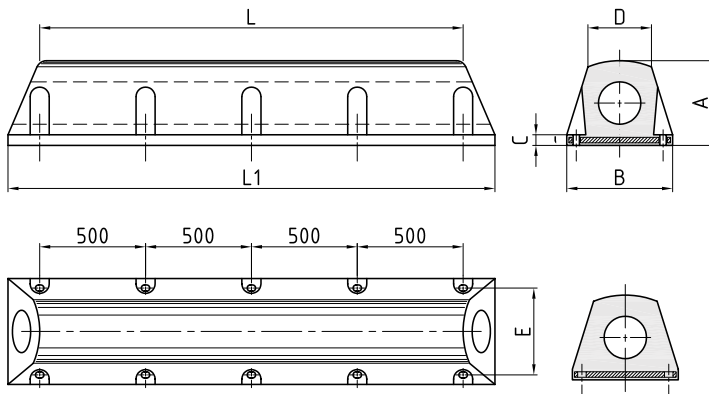
H [mm]	B [mm]	C [mm]	ØD [mm]	ØF [mm]	L _{max} [mm]	Weight [kg/m]	ØPin [mm]
200	35	130	28	90	2000	33	25
250	50	150	33	100	2000	54	30
300	60	180	33	115	2000	80	30
350	70	210	33	125	2000	114	30

WING-TYPE FENDER DIMENSIONS

Fender Type	H [mm]	B [mm]	C [mm]	ØD [mm]	Weight [kg/m]
WD 180	180	100	25	50	10.5
WD 215	215	150	30	75	20.3
WD 245	245	150	30	75	21.3
WD 280	280	200	40	100	35.8
WD 320	320	200	40	100	37.6
WD 370	370	250	50	125	57.0
WD 410	410	250	50	125	59.0



MC FENDER DIMENSIONS



Fender Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
300H	300	360	40	200	280
400H	400	500	50	300	410
500H	500	562	50	300	472
600H	600	700	125	420	550

Fender Type	L = 1000 mm			L = 1500 mm			L = 2000 mm			L = 2500 mm			L = 3000 mm		
	L1	Bolts	Weight [kg]	L1	Bolts	Weight [kg]	L1	Bolts	Weight [kg]	L1	Bolts	Weight [kg]	L1	Bolts	Weight [kg]
300H	1350	6 x M20	134	1850	8 x M20	189	2350	10 x M20	244	2850	12 x M20	299	3350	14 x M20	354
400H	1300	6 x M24	276	1800	8 x M24	392	2300	10 x M24	508	2800	12 x M24	624	3300	14 x M24	740
500H	1300	6 x M24	437	1800	8 x M24	622	2300	10 x M24	807	2800	12 x M24	992	3300	14 x M24	1170
600H	1300	4 x M48	518	1800	6 x M48	744	2300	8 x M48	970	2800	10 x M48	1196	3300	12 x M48	1422