



APPLICATIONS

Shackles are used in lifting and static systems as removable links to connect (steel) wire rope, chain and other fittings. Screw pin shackles are used mainly for non-permanent applications. Safety bolt shackles are used for long-term or permanent applications or where the load may slide on the pin causing rotation of the pin.

Chain or deeshackles are mainly used on one-leg systems whereas anchor or bow shackles are mainly used on multi-leg systems.

General Notes

a) Shackles should be inspected before use to ensure that:

- the body and pin of the shackle are both identifiable as being of the same size, type and make
- all markings are readable
- the threads of the pin and the body are undamaged
- the body and the pin are not distorted
- the body and the pin are not unduly worn
- the body and the pin are free from nicks, gouges, cracks and corrosion

Certification

Upon request at time of order, all load shackles can be supplied with any of the following documents or certificates:

- Manufacturer test certificate
- EC Declaration of Conformity
- ABS certificate
- DNV certificate

Instructions for use

Shackles should be inspected before use to ensure that:

- All markings are legible;
- the body and pin are both identifiable as being of the same size, type and make;
- the threads of the pin and the body are undamaged;
- never use a safety bolt type shackle without using a securing pin;
- the body and the pin are not distorted or unduly worn;
- the body and pin are free from nicks, gouges, cracks and corrosion;
- shackles may not be heat treated as this may affect their Working Load Limit;
- never modify, repair or reshape a shackle by machining, welding, heating or bending as this will affect the Working Load Limit.

SIDE LOADS

Side loads should be avoided as well, as the products are not designed for this purpose. If side loads cannot be avoided, the following reduction factors must be taken into account:

Reduction of Work Load Limits

Work load limits on shackles are subject to downward adjustment in case of side loading

45° reduce to 70% of WLL

90° reduce to 50% of WLL

If extreme temperature conditions are applicable

0 - 200° 1.00 x WLL

201 - 300° 0.90 x WLL

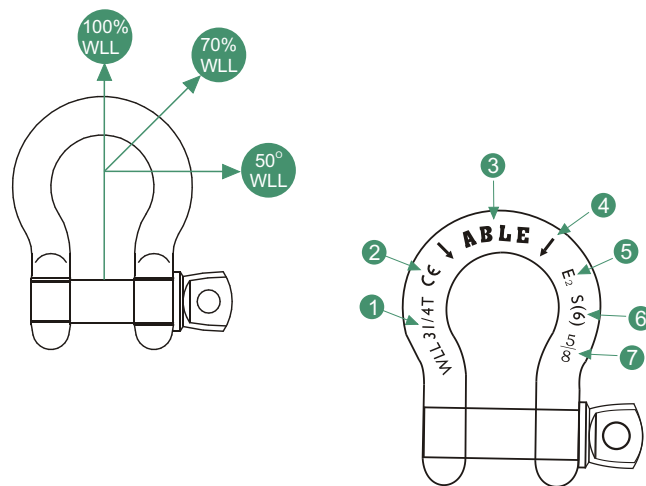
301 - 400° 0.75 x WLL

above 400° do not use

Markings

All tested shackles come standard with the following markings:

1. work load limit in tonnes
2. CE mark
3. Manufacturer's mark
4. 45° angle mark
5. batch mark
6. grade of steel
7. Size in Inches



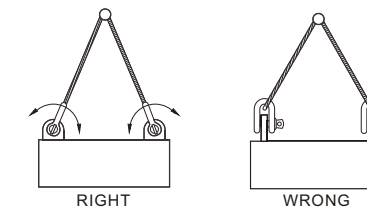
Assembly

Ensure that the pin is correctly screwed into the shackle eye, i.e. Tighten hand-tight, then secure using a wrench or other suitable tool so that the collar of the pin is fully seated on the shackle eye. Ensure that the pin is of the correct length so that it penetrates the full depth of the screwed eye and allows the collar of the pin to seat on the surface of the shackle eye.

Incorrect seating of the pin may be due to a bent pin, too tight fitting thread or misalignment of the pin holes. Do not use the shackle under these circumstances. Never replace a shackle pin except with one of the same size, type and make as it may not be suitable for the loads imposed.

Select the correct type of shackle and its Working Load Limit for the particular application. Should extreme circumstances or shock loading be applicable, this must be well taken into account on selecting the correct shackle. Please note that commercial shackles are not to be used for lifting applications.

Make sure that the shackle is supporting the load correctly, i.e. along the shackle body centreline, avoid introduction of bending loads, unstable loads and do not apply overloads.



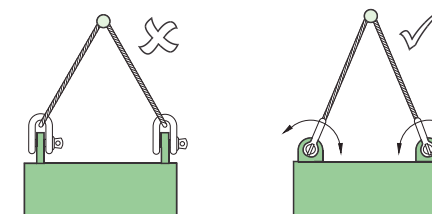
Safe use and maintenance



Usage

a) Select the correct type of shackle for a particular application.

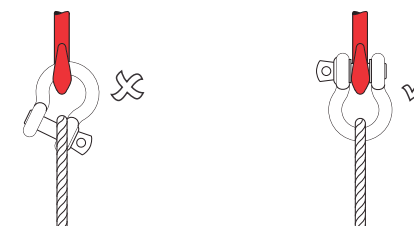
b) Shackles should not be used in a manner that imposes a side loading unless specifically permitted by the manufacturer. This means that the shackle body should take the load along the axis of its centreline.



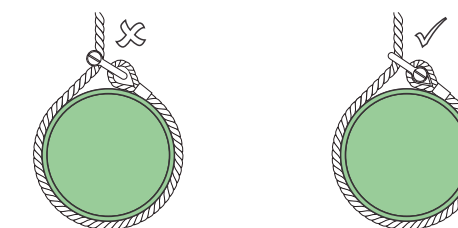
c) When using shackles in conjunction with multi-leg slings, due consideration should be given to the effect of the angle between the legs of the sling. As the angle increases so does the load in the sling leg and consequently in any shackle attached to the leg.

d) When a shackle is used to connect two slings to the hook of a lifting machine. It should be a Bow type shackle assembled with the slings in the shackle body and the hook engaged with the shackle pin.

e) To avoid eccentric loading of the shackle, a loose spacer may be used on either end of the pin. Do not reduce the width between the shackle jaws by welding washers or spacers to the inside faces of the eye, this will adversely affect the properties of the shackle.

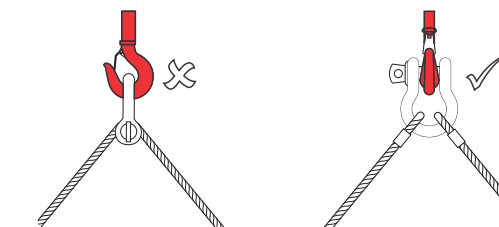


f) Avoid applications where due to movement the shackle pin can roll and possibly unscrew.



g) In applications where the shackle is to be left in place for a prolonged period or where maximum pin security is required, use a safety pin.

h) Avoid applications where the load is unstable



i) Shackles should not be modified, heat treated, galvanized or subject to any plating process without the approval of the manufacturer.

j) Shackles should not be immersed in acid solutions or exposed to acid fumes or other chemicals without Approval from the manufacturer.

Inspection

a) Shackles in use should be subject to periodic examination by a competent person at intervals not exceeding three months.



Model: SPB

- Screw pin bow shackles meet the performance requirements of Federal Specification RR-C-271D Type IVA, Grade A, Class 2, except for those provisions required of the contractor.
- Capacities: from 1/2 to 55 metric tons.
- Forged - Quenched and Tempered, with alloy pin.
- Working Load Limit permanently shown on every shackle.
- Hot Dip galvanized body, Yellow Pin.
- Fatigue Rated.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charged for proof testing and certification available when requested at the time of order.
- Shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules at -20 degree C.



Model: SPD

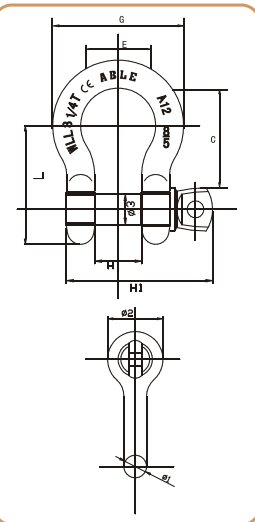


Model: SBB

- BoltTypeAnchor shackles with thin head bolt - nut with cotter pin. Meets the performance requirements of Federal Specifications RR-C-271D Type IVA, Grade A Class 3, except for those provisions required of the Contractor.
- Working Load Limit permanently shown on every shackle. Capacities from 1/2 to 85 metric tons.
- Forged, Quenched and Tempered, with alloy pins.
- Hot Dip galvanized body, Yellow Pin.
- Fatigue rated.
- ABLE Products meet or exceed all the requirements of ASME B30.26 including identification, ductility, design factor, proof load and work temperature requirements. Importantly, ABLE products meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Shackles 55 metric tons and smaller can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification.

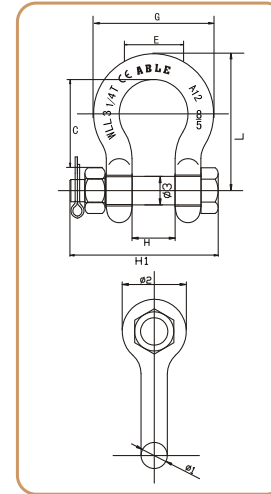


Model: SBD



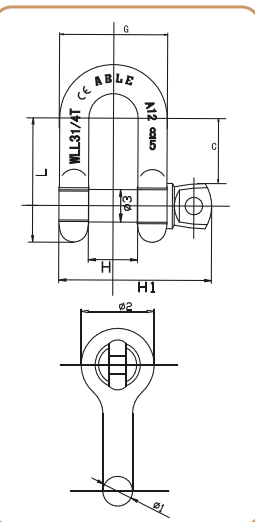
Forged Screw Pin Bow Shackle Type: SPB

Product Code	Nominal Size (in.)	WLL 6:1 Ton	Weight Kg	Dimensions (mm)										Tolerance +/-	
				H	φ3	C	φ1	E	φ2	G	L	H1	C	H	
SPB 006	1/4	1/2	0.05	13.00	8.00	29.00	6.80	20.00	17.50	33.60	31.75	38.00	3.30	1.50	
SPB 008	5/16	3/4	0.08	13.50	9.50	31.00	8.00	21.50	21.00	37.50	35.50	42.50	3.30	1.50	
SPB 009	3/8	1	0.15	17.00	11.20	36.50	10.00	26.20	25.00	46.20	41.50	53.50	3.30	1.50	
SPB 011	7/16	1.1/2	0.20	18.50	12.70	42.90	11.30	29.50	27.00	52.10	48.00	59.00	3.30	1.50	
SPB 013	1/2	2	0.30	20.60	15.80	47.80	12.70	33.30	31.00	58.70	54.50	70.00	3.30	1.50	
SPB 016	5/8	3.1/4	0.63	27.00	19.00	60.00	16.00	43.00	40.00	75.00	68.00	87.50	6.35	1.50	
SPB 019	3/4	4.3/4	1.02	32.00	22.00	71.50	19.00	51.00	48.00	89.00	81.00	101.00	6.35	1.50	
SPB 022	7/8	6.1/2	1.51	37.00	25.00	84.50	22.00	58.00	54.00	102.00	95.00	116.00	6.35	1.50	
SPB 025	1	8.1/2	2.27	43.50	28.00	96.30	26.50	68.50	60.00	121.50	106.00	135.50	6.35	1.50	
SPB 028	1.1/8	9.1/2	3.38	48.00	32.00	109.00	29.00	75.00	68.00	133.00	121.50	145.00	6.35	1.50	
SPB 032	1.1/4	12	4.60	53.00	35.00	120.50	32.00	84.00	76.00	148.00	134.00	160.00	6.35	1.50	
SPB 035	1.3/8	13.1/2	5.84	59.00	38.00	134.00	35.00	94.00	84.00	164.00	148.00	178.00	6.35	3.30	
SPB 038	1.1/2	17	7.80	62.00	42.00	148.50	38.00	99.00	92.00	175.00	166.00	194.00	6.35	3.30	
SPB 044	1.3/4	25	12.33	75.00	50.00	178.00	45.00	128.00	106.00	218.00	192.00	228.00	6.35	3.30	
SPB 050	2	35	18.54	84.00	56.00	197.00	52.00	148.00	122.00	252.00	212.00	255.00	6.35	3.30	
SPB 064	2.1/2	55	37.60	107.00	70.00	269.50	63.50	186.00	145.00	313.00	284.00	317.00	6.35	3.30	



Forged Bolt Bow Shackle Type: SBB

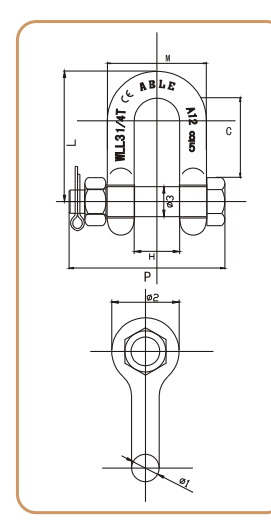
Product Code	Nominal Size (in.)	WLL 6:1 Ton	Weight Kg	Dimensions (mm)										Tolerance +/-	
				H	φ3	C	φ1	E	φ2	L	G	H1	C	H	
SBB 006	1/4	1/2	0.06	13.00	8.00	29.00	6.80	20.00	17.50	39.80	33.60	42.50	3.30	1.50	
SBB 008	5/16	3/4	0.10	13.50	9.50	31.00	8.00	21.50	21.00	43.75	37.50	48.00	3.30	1.50	
SBB 009	3/8	1	0.17	17.00	11.20	36.50	10.00	26.20	25.00	52.10	46.20	57.50	3.30	1.50	
SBB 011	7/16	1.1/2	0.24	18.50	12.70	42.90	11.30	29.50	27.00	60.55	52.10	64.50	3.30	1.50	
SBB 013	1/2	2	0.35	20.60	15.80	47.75	12.70	33.30	31.00	68.35	58.70	74.50	3.30	1.50	
SBB 016	5/8	3.1/4	0.67	27.00	19.00	60.00	16.00	43.00	40.00	85.50	75.00	93.00	6.35	1.50	
SBB 019	3/4	4.3/4	1.12	32.00	22.00	71.50	19.00	51.00	48.00	101.50	89.00	107.00	6.35	1.50	
SBB 022	7/8	6.1/2	1.64	37.00	25.00	84.50	22.00	58.00	54.00	119.00	102.00	121.00	6.35	1.50	
SBB 025	1	8.1/2	2.42	43.50	28.00	96.25	26.50	68.50	60.00	136.75	121.50	137.00	6.35	1.50	
SBB 028	1.1/8	9.1/2	3.56	48.00	32.00	109.00	29.00	75.00	68.00	154.00	133.00	145.00	6.35	1.50	
SBB 032	1.1/4	12	4.91	53.00	35.00	120.50	32.00	84.00	76.00	170.00	148.00	167.00	6.35	1.50	
SBB 035	1.3/8	13.1/2	6.17	59.00	38.00	134.00	35.00	94.00	84.00	188.00	164.00	185.00	6.35	3.30	
SBB 038	1.1/2	17	8.47	62.00	42.00	148.50	38.00	99.00	92.00	207.50	175.00	198.00	6.35	3.30	
SBB 044	1.3/4	25	13.26	75.00	50.00	178.00	45.00	128.00	106.00	248.00	218.00	227.00	6.35	3.30	
SBB 050	2	35	19.53	84.00	56.00	197.00	52.00	148.00	122.00	277.00	252.00	250.00	6.35	3.30	
SBB 064	2.1/2	55	38.56	107.00	71.00	269.50	66.00	186.00	145.00	368.00	318.00	299.00	6.35	3.30	
SBB077	3	85	63.11	127.00	80.00	330.50	76.00	200.00	165.00	587.50	365.00	92.00	6.35	3.30	



Forged Screw Pin Dee Shackle Type: SPD

Product Code	Nominal Size (in.)	WLL 6:1 Ton	Weight Kg	Dimensions (mm)										Tolerance +/-	
				H	φ3	C	φ1	φ2	G	L	H1	C	H		
SPD 006	1/4	1/2	0.05	13.00	8.00	22.00	6.80	17.50	26.60	28.25	378.00	3.30	1.50		
SPD 008	5/16	3/4	0.08	13.50	9.50	25.50	8.00	21.00	29.50	34.00	42.50	3.30	1.50		
SPD 009	3/8	1	0.13	17.00	11.20	30.90	10.00	25.00	37.00	40.50	53.50	3.30	1.50		
SPD 011	7/16	1.1/2	0.18	18.50	12.70	36.40	11.30	27.00	40.50	47.00	59.00	3.30	1.50		
SPD 013	1/2	2	0.28	20.60	15.80	41.40	12.70	31.00	46.00	54.50	70.30	3.30	1.50		
SPD 016	5/8	3.1/4	0.55	27.00	19.00	51.00	16.00	40.00	59.00	67.00	88.00	6.35	1.50		
SPD 019	3/4	4.3/4	0.91	32.00	22.00	63.00	19.00	48.00	70.00	82.00	101.00	6.35	1.50		
SPD 022	7/8	6.1/2	1.40	37.00	25.00	72.00	22.00	54.00	81.00	93.00	117.00	6.35	1.50		
SPD 025	1	8.1/2	2.10	43.50	28.00	81.75	26.50	60.00	96.50	104.00	137.00	6.35	1.50		
SPD 028	1.1/8	9.1/2	3.10	48.00	32.00	94.00	29.00	68.00	106.00	120.00	145.50	6.35	1.50		
SPD 032	1.1/4	12	4.10	53.00	35.00	102.00	32.00	76.00	117.00	131.00	160.00	6.35	1.50		
SPD 035	1.3/8	13.1/2	5.30	59.00	38.00	113.50	35.00	84.00	129.00	145.00	178.00	6.35	3.30		
SPD 038	1.1/2	17	7.10	62.00	42.00	123.00	38.00	92.00	138.00	159.00	194.50	6.35	3.30		
SPD 044	1.3/4	25	11.10	75.00	50.00	148.00	45.00	106.00	165.00	188.50	228.00	6.35	3.30		

■ Minimum breaking strength is 6times the working load limit



Forged Bolt Dee Shackle Type: SBD

Product Code	Nominal Size (in.)	WLL 6:1 Ton	Weight Kg	Dimensions (mm)										Tolerance +/-	
				H	φ3	φ1	φ2	C	L	M	P	C	H		
SBD 006	1/4	1/2	0.05	12.00	8.50	6.50	15.00	15.00	32.00	25.00	40.00	3.30	1.50		
SBD 008	5/16	3/4	0.08	13.00	9.50	8.50	18.00	20.00	40.00	30.00	50.00	3.30	1.50		
SBD 009	3/8	1	0.14	17.00	11.20	10.00	25.00	30.90	59.00	37.00	57.50	3.30	1.50		
SBD 011	7/16	1.1/2	0.21	18.50	12.70	11.30	27.00	36.40	67.30	40.50	64.50	3.30	1.50		
SBD 013	1/2	2	0.32	20.60	15.80	12.70	31.00	41.40	77.50	46.00	74.50	3.30	1.50		
SBD 016	5/8	3.1/4	0.61	27.00	18.80	16.00	40.00	51.00	96.50	59.00	93.00	6.35	1.50		
SBD 019	3/4	4.3/4	1.04	32.00	22.00	19.10	48.00	63.00	117.00	70.00	107.00	6.35	1.50		
SBD 022	7/8	6.1/2	1.53	37.00	25.00	22.00	54.00	72.00	133.50	81.00	121.00	6.35	1.50		
SBD 025	1	8.1/2	2.26	43.50	28.00	26.50	60.00	81.80	150.80	93.50	137.00	6.35	1.50		
SBD 028	1.1/8	9.1/2	3.37	48.00	32.00	29.00	68.00	94.00	173.00	106.00	145.00	6.35	1.50		
SBD 032	1.1/4	12	4.41	53.00	35.00	32.00	76.00	102.00	189.50	117.00	167.00	6.35	1.50		
SBD 035	1.3/8	13.1/2	5.86	59.00	38.00	35.00	84.00	113.50	209.50	129.00	185.00	6.35	3.30		
SBD 038	1.1/2	17	7.55	62.00	42.00	38.00	92.00	123.00	228.00	138.00	198.00	6.35	3.30		
SBD 044	1.3/4	25	11.77	75.00	50.00	45.00	106.00	148.00	271.00	165.00	227.00	6.35	3.30		

■ Minimum breaking strength is 6times the working load limit