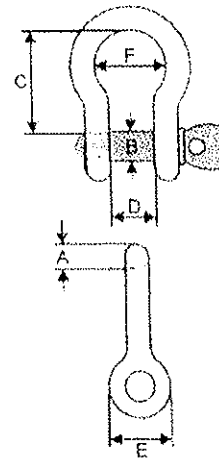


# SHACKLES

## 'Golden Pin'® Screw Pin Anchor Shackles

• Meeting the performance requirements of U.S. Fed. Spec. RR-C-271D, Type 4A, Grade A, Class 2

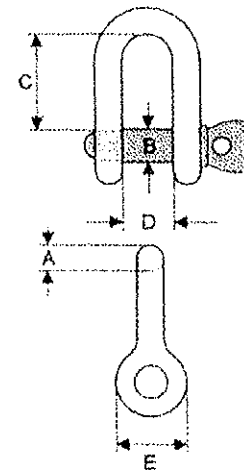
Size	Pin Diameter	Dimensions (Inches)				WLL (tons)	Weight (lbs)	Vanguard Code
		A	B	C	D			
3/16	1/4	0.93	0.39	0.59	0.64	1/3	0.08	2902 0012
1/4	5/16	1.14	0.49	0.70	0.75	1/2	0.12	2902 0016
5/16	3/8	1.23	0.53	0.83	0.80	3/4	0.18	2902 0020
3/8	7/16	1.41	0.69	0.98	1.01	1	0.32	2902 0024
7/16	1/2	1.70	0.72	1.06	1.13	1 1/2	0.46	2902 0028
1/2	5/8	1.83	0.83	1.18	1.25	2	0.68	2902 0032
5/8	3/4	2.36	1.06	1.55	1.67	3 1/4	1.38	2902 0040
3/4	7/8	2.76	1.24	1.78	1.98	4 3/4	2.24	2902 0048
7/8	1	3.29	1.42	2.09	2.25	6 1/2	3.50	2902 0056
1	1 1/8	3.69	1.75	2.35	2.66	8 1/2	5.00	2902 0100
1 1/8	1 1/4	4.23	1.80	2.71	2.79	9 1/2	7.65	2902 0108
1 1/4	1 3/8	4.63	2.12	3.01	3.15	12	10.40	2902 0116
1 3/8	1 1/2	5.17	2.30	3.32	3.80	13 1/2	13.80	2902 0124
1 1/2	1 5/8	5.67	2.39	3.63	3.85	17	17.90	2902 0132
1 3/4	2	7.06	2.96	4.23	4.98	25	27.90	2902 0148
2	2 1/4	7.75	3.31	5.11	5.59	35	42.70	2902 0200
2 1/2	2 7/10	10.25	4.00	5.75	7.00	55	85.00	2902 0232



## 'Golden Pin'® Screw Pin Chain Shackles

• Meeting the performance requirements of U.S. Fed. Spec. RR-C-271D, Type 4B, Grade A, Class 2

Size	Pin Diameter	Dimensions (Inches)			WLL (tons)	Weight (lbs)	Vanguard Code
		A	B	C			
1/4	5/16	0.83	0.47	0.71	1/2	0.11	3912 0016
5/16	3/8	0.98	0.47	0.75	3/4	0.17	3912 0020
3/8	7/16	1.22	0.63	0.96	1	0.24	3912 0024
7/16	1/2	1.50	0.75	1.06	1 1/2	0.40	3912 0028
1/2	5/8	1.61	0.83	1.22	2	0.59	3912 0032
5/8	3/4	2.01	1.10	1.57	3 1/4	1.20	3912 0040
3/4	7/8	2.41	1.25	1.81	4 3/4	2.20	3912 0048
7/8	1	2.80	1.42	2.13	6 1/2	3.20	3912 0056
1	1 1/8	3.16	1.77	2.36	8 1/2	4.80	3912 0100
1 1/8	1 1/4	3.50	1.85	2.69	9 1/2	6.80	3912 0108
1 1/4	1 3/8	3.97	2.05	3.00	12	9.00	3912 0116
1 1/2	1 5/8	4.80	2.39	3.68	17	16.00	3912 0132
2	2 1/4	6.75	3.25	5.00	35	36.00	3912 0200



**Note:**

If the pin, after a 1/4 turn, remains hard to remove, there is a good chance that the shackle has been so overloaded beyond the designed working load limit (WLL) and it, therefore, must be discarded.

# MILL CERTIFICATE

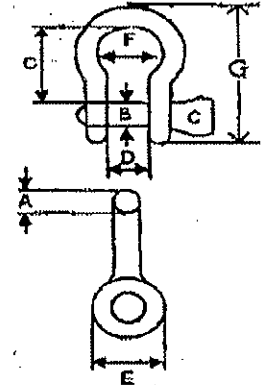
VANGUARD QINGDAO

**GOLDEN PIN SCREW PIN ANCHOR SHACKLES**  
**MEET TO FEDERAL SPECIFICATION RR-C-271D, TYPE IVA, GRADE A, CLASS 2 AND CSA S37-01(94)**

DATE: DEC. 18. 2008

P.O. NO. 1177-T

Drop forged. Body carbon steel, hot dip galvanized, marked "VANGUARD", size, tensile strength and mould number.  
 Pin alloy steel, yellow chromated, marked "HS".  
 Shackles Heat-treating Procedure:  
 Body will be heated to 820°C and keep warm for 90 minutes, then quenched in water. After that, the body will be heated again to 500°C~530°C and keep warm for 105 minutes, and then cooled in air.  
 Pin will be heated to 880°C and keep warm for 15 minutes, then quenched in oil. After that, the pin will be heated again to 595°C and keep warm for 2 hours, and cooled in air.



**Body Material Analysis (Standard ASTM1045)**

Element	C	Si	P	S	Cr	Ni	Mo	Mn
%	0.45	0.27	0.016	0.013				0.61

**Pin Material Analysis (Standard ASTM5140)**

Element	C	Si	P	S	Cr	Ni	Mo	Mn
%	0.41	0.26	0.013	0.014	0.93			0.6

**SPECIFICATION**

SIZE (Inches)	Approx. Weight (LBS)	BATCH NO.:	Dimensions (Inches)					
			A	B	C	D	E	F
5/8"	1.37	RB8	0.635	0.751	2.330	1.151	1.139	1.622
3/4"	2.35	RB8	0.756	0.864	2.778	1.296	1.801	1.870
7/8"	3.62	RB8	0.899	0.981	3.301	1.409	2.073	2.227
1"	5.03							
1-1/8"	7.41							
1-1/4"	9.50	RB8	1.290	1.374	4.546	2.026	2.993	3.077
1-3/8"	13.53							
1-1/2"	17.20	RA8	1.568	1.618	5.712	2.483	3.622	3.879

**PHYSICAL PERFORMANCE**

SIZE (Inches)	WLL (Tons)	Proof Load (LBS)	Specified Breaking Load(LBS)	Actual Breaking Load(LBS)	Actual Proof Load (LBS)	Hardness	Elongation %
5/8"	3-1/4	14329.80	42989.40	47560			
3/4"	4-3/4	20943.60	62830.80	69545			
7/8"	6-1/2	28659.60	85978.80	92233			
1"	8-1/2	37478.00	112434.00				
1-1/8"	9-1/2	41887.13	125661.39				
1-1/4"	12	52910.05	158730.15	164510			
1-3/8"	13-1/2	59523.81	178571.43				
1-1/2"	17	74955.91	224957.71	-----	74956LBS	(NO BROKEN)	

Q. C. MANAGER: B

INSPECTOR: 张