

pewag D.line

Heavy duty shackles for lifting applications



pewag[®] D.line heavy duty shackles

Heavy duty shackles are used in lifting and static systems as removable links to connect (steel) wire rope & roundslings with lifting goods & fittings. They're also used in a wide range of industries: Offshore and onshore, marine and port, wind energy, oil and gas and more.

The pewag range of shackles includes D.line (P285), D.line Plus (P485) and D.line Star (P685) ranging from 85t to 1500t WLL (see page 4 & 5 for more detail).

pewag's benefits at a glance:

- ✓ Hundreds of years of experience in the production of chains and components.
- ✓ Extensive product portfolio.
- ✓ Engineered and manufactured in Europe.
- ✓ Made in Germany.
- ✓ Innovative products made of high-quality material.
- ✓ pewag meets all quality standards.
- ✓ Lifting solutions for various industries and applications.
- ✓ Customised products and solutions.
- ✓ 24/7 online product trainings in the pewag academy.
- ✓ Customer-focus and extensive service level.
- ✓ pewag is a global player with an international network of subsidiaries .
- ✓ One-stop manufacturer.



What are the key features of pewag D.line?

- High and consistent quality efficient and reliable product
- A smooth finish reduces the wear on slings, masterlinks and similar equipment
- Type approval by DNV according to standards DNV-ST-0377, DNV-ST-0378
- Made in Germany

Each shackle is supplied with

- 100% proof load test to 2 x WLL
- 100% UT of raw material
- 3.1 material certificate acc.to EN 10204
- peTAG product identification NFC chip
- EU Declaration of Conformity CE
- pewag PLGW pewag pro anchor point (rotatable and lockable)

By request we can supply following certificates

- DNV product certificate for loose gear (CG3)
- Witnessed proof load test certificate
- 100% MPI and UT test certificate



Zero-waste forging process: eyes are upset forged



Shackles and pins CNC machined



Shackles are proof load tested

pewag D.line shackles 85t to 1500t WLL

The safety factor of pewag D.line shackles is fully assessed by FEA and confirmed by physical testing during DNV Type approval process. pewag D.line Heavy Lifting Shackles generally comply or exceed design and testing requirements of ASME B30.26-1 and Federal Specification RR-C-271.



Type	D.line (P285)	D.line Plus (P485)	D.line Star (P685)
Working Load Limit Range (WLL)	85t - 1500t	120t - 175t	85t - 600t
Charpy value at Temperature	27J / -20°C	27J / -20°C	42J / -40°C
Operating Temperature Range	-20°C / +200°C	-20°C / +200°C	-60°C / +200°C

pewag D.line markings



- ✓ Markings on body and pin
- ✓ Steel grade
- ✓ CE and UKCA conformity code
- ✓ pewag logo
- ✓ Made in Germany - Sticker
- ✓ Working Load Limit (WLL)
- ✓ Traceability Code

* Shackles with no markings for WLL, brand or traceability are not for lifting applications.
 ** optional, only on request

Use Cases

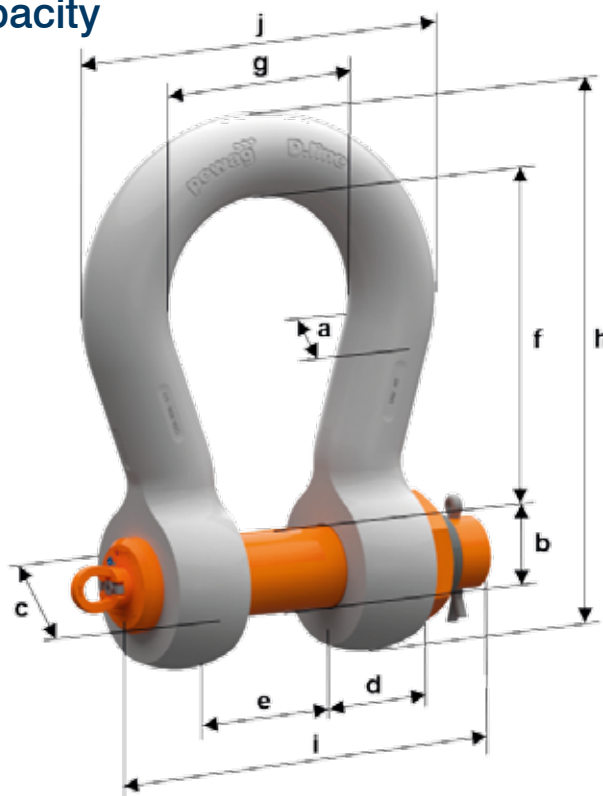
pewag D.line (P285) shackles are used for lifting operations up to a weight of 1500 tonnes.

pewag D.line Plus (P485) shackles are made of higher strength material and are well suited for use where higher loads are required with reduced dimensions and weight.

pewag D.line Star (P685) shackles are designed for use in low temperature conditions.

pewag shackles meet all relevant design & quality requirements.

Dimensions & Capacity



Type	WLL	bow diameter a	pin diameter b (+/- 0,5)	inside width g	jaw gap e (min./max.)	inside height f	eye diameter c (min./max.)	eye thickness d	pin length i	total height h (max.)	total width j (max.)	aprox. weight	
	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	
D.line P285	D.line Star P685	85	85	83	190	127/133	330	162/177	80	398	574	376	78
		120	95	95	238	144/150	380	200/215	89	438	659	444	115
		150	105	108	275	165/173	385	230/245	100	508	696	503	162
		200	120	125	280	180/188	450	270/288	110	550	807	540	240
		250	130	140	305	205/215	520	290/308	115	590	914	585	306
		300	140	150	305	205/215	530	315/335	120	605	952	605	368
		400	160	175	325	230/240	575	365/387	160	715	1,057	667	602
		500	180	185	350	250/262	650	385/410	160	740	1,168	734	735
		600	200	205	375	275/288	650	430/458	185	828	1,222	800	969
		700	210	215	400	300/315	650	440/468	200	885	1,242	847	1,091
		800	210	220	400	300/315	650	450/478	200	890	1,247	847	1,106
		1,000	240	240	420	340/357	700	500/530	210	955	1,366	928	1,476
		1,250	260	270	450	360/378	750	570/600	225	1,010	1,486	1,000	1,955
		1,500	280	290	450	360/378	800	610/640	225	1,010	1,586	1,040	2,327
D.line Plus P485		120	85	83	190	127/133	330	162/177	80	398	574	376	78
		150	95	95	238	144/150	380	200/215	89	438	659	444	115
		175	105	108	275	165/173	385	230/245	100	508	696	503	162

PL = 2 x WLL exceeding the class requirements. All dimensions in mm

Quality Control

pewag shackles are forged from high quality alloy steels and quenched and tempered according to approved heat treatment procedures complying with the latest requirements set by the Classification Societies. Each batch is tested for mechanical properties by an accredited partner.

The production history of each shackle is traceable to heat treatment batch, proof load test and inspection certificate. pewag shackles meet all relevant requirements of the Machinery Directive 2006/42/EC and the UK Supply of Machinery (Safety) Regulations 2008.

Where requested the proof load test and final inspection is performed under the survey of a classification society, such as ABS, BV, DNV, LROS or any other officially certified inspection body at additional cost. Additional certification must be requested at time of order.



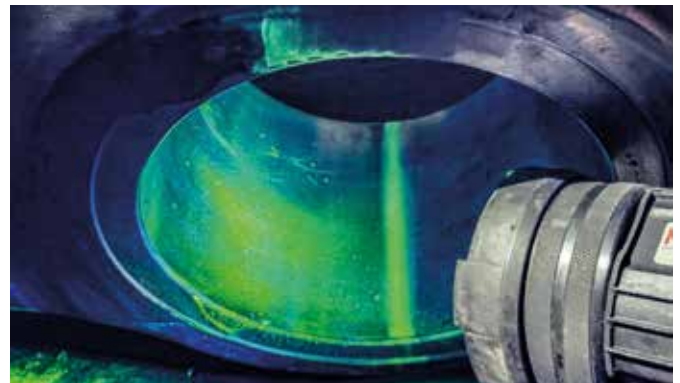
Shackle unique ID / traceability marking



NDT - ultrasonic testing (on request)



Proof testing (2 x WLL) using quick release system



NDT - Magnetic Particle Inspection (on request)

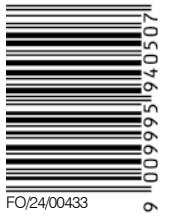


Mechanical testing is performed for every production batch and ensures individual traceability to every shackle.

pewag services and solutions

Due to our extensive experience in developing and manufacturing chains and components, pewag is a trustworthy partner for any lifting challenge.





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