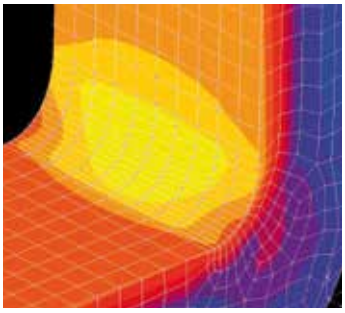
Forks

BOLZONI

Quality, Safety, Efficiency Worldwide



High quality

Bolzoni Group offers complete range of forks for lift trucks, construction and agricultural material handling machines, in many different capacities, sections and lengths, ISO and special mountings.

Innovation

Strongly focused on product innovation, Bolzoni Group has employed the most advanced technologies and software for fork designing.
By using first class raw material and applying modern technological solutions and automated production processes, forks are produced according to customer requirements and the industry's strictest standards.

Flexibility

High-capacity manufacturing facilities offer flexibility in production volume output and fork model availability, required by OEM's on equipments installed at the origin and by the after-market, suitable for different machines and various applications.

Advanced production process

Production standards for all Bolzoni forks are based on common key- features:

- Innovative and highly automated production process.
- Prime quality steel offering good welding characteristics and strong resistance to wear.
- Reinforced fork heel, bended in multi-phase press mould.
- Automated welding of upper and lower hooks with a robotic system, granting better quality of the welding, quality repeatibility and higher process speed.
- Complete heat treatment with hardening and tempering on the entire fork, providing the best quality and reliability characteristics.

Production processes at the Longhua plant, P.R.C.

Certified Quality

Certified quality of chemical composition and of the heat treatment applied on raw material used. Bar coding allowing for the tracking of raw material back to source.

All forks produced comply with the parameters outlined in ISO 2328 and 2330.
In order to satisfy these standards, each different type of forks is subjected to the following tests:

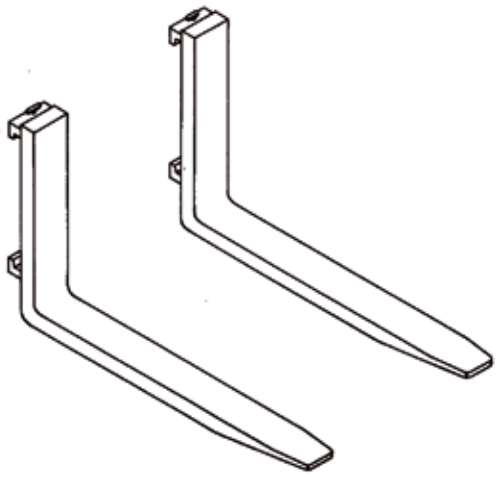
- 1 fatigue test of 1,000,000 cycles at 25% overload.
- 1 static test of 2 cycles with triple nominal capacity.
- 1 resilience test at -20°C with a resulting value higher than 27 Joules.

The following certifications are proof of Bolzoni Group's commitment to continuous improvements in quality and efficiency. The aim is to provide the best product and service support to customers worldwide, in full observance of a fair social policy towards the employees, customers, suppliers and society in general while respecting the environment:

- ISO 9001 Quality System Certification.
- ISO 3834-2 Quality Management in Welding.
- UNI EN 14001:2015 Environment Certification.

Quality checks during the production processes.

Range: 1900 Kg - 3000 Kg



Capacity for Fork Couple Q Kg	Load Centre BP mm	Mounting Class ISO 2328	Fork Section A x E mm	Fork Length L mm	Weight of Single Fork W Kg
2000	500	2 A	① 80 x 40	800	30
				900	33
				1000	34
				1100	37
				1200	39
				1300	41
				1400	44
				1500	46
				1600	49
				1800	52
				2000	57
1900	500	2 A	100 x 35	800	32
				900	35
				1000	37
				1100	40
				1200	41
				1300	44
				1400	47
				1500	50
				1600	52
				1700	55
				1800	56
				2000	62
				2200	67
				2400	73
2500	500	2 A	100 x 40	800	37
				900	40
				1000	42
				1100	45
				1200	47
				1300	50
				1400	53
				1500	56
				1600	60
				1700	63
				1800	64
				2000	70
				2200	77
				2400	83

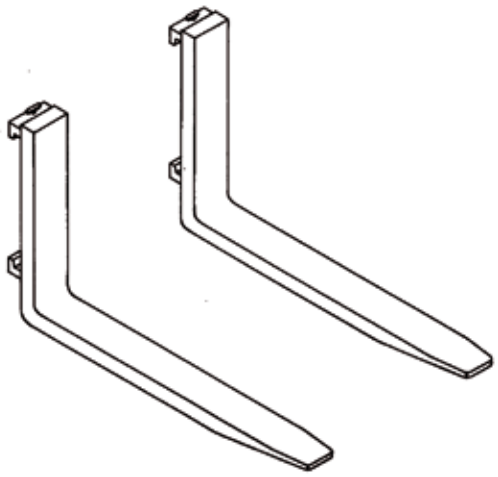
Capacity for Fork Couple Q Kg	Load Centre BP mm	Mounting Class ISO 2328	Fork Section A x E mm	Fork Length L mm	Weight of Single Fork W Kg
3000	500	2 A	100 x 45	800	41
				900	45
				1000	47
				1100	51
				1200	53
				1300	57
				1400	60
				1500	64
				1600	67
				1700	71
				1800	72
				1900	76
				2000	79
				2100	83
				2200	86
				2300	90
				2400	93
2000	500	2 A	120 x 35	800	39
				900	42
				1000	44
				1100	48
				1200	50
				1300	53
				1400	56
				1500	60
				1600	63
				1700	66
				1800	68
				1900	71
				2000	74
				2200	81
				2400	88
3000	500	2 A	120 x 40	800	44
				900	48
				1000	50
				1100	54
				1200	57
				1300	60
				1400	64
				1500	68
				1600	72
				1700	75
				1800	77
				1900	81
				2000	85
				2100	88
				2200	92
				2300	96
				2400	100
2500	500	2 A	130 x 35	1000	49
				1100	53
				1200	55
				1300	59
				1400	62
				1500	66

Notes:

- ① The upper hook is wider than the fork width.

Options:

- ISO 2328 Class B mounting.
- Different fork sections and lenghts.
- Pin-type mounting.
- Forks for special applications.



Range: 3000 Kg - 5800 Kg

Capacity for Fork Couple Q Kg	Load Centre BP mm	Mounting Class ISO 2328	Fork Section A x E mm	Fork Length L mm	Weight of Single Fork W Kg
3200	500	3 A	100 x 45	800	47
				900	51
				1000	53
				1100	56
				1200	59
				1300	62
				1400	66
				1500	69
				1600	73
				1700	76
				1800	78
				1900	82
				2000	85
				2100	89
				2200	92
				2300	96
				2400	99
4400	500	3 A	120 x 50	800	62
				900	67
				1000	70
				1100	75
				1200	78
				1300	83
				1400	87
				1500	92
				1600	97
				1700	102
				1800	104
				1900	109
				2000	113
				2100	118
				2200	123
				2300	127
				2400	132

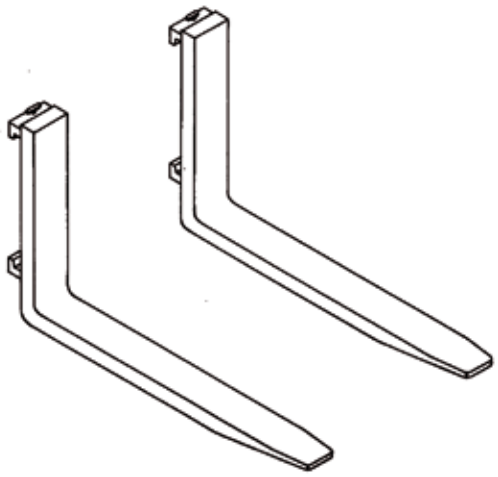
Capacity for Fork Couple Q Kg	Load Centre BP mm	Mounting Class ISO 2328	Fork Section A x E mm	Fork Length L mm	Weight of Single Fork W Kg
4200	500	3 A	125 x 45	1000	64
				1100	69
				1200	72
				1300	76
				1400	80
				1500	85
				1600	89
				1700	93
				1800	96
				1900	100
				2000	104
				2100	109
				2200	113
				2300	118
				2400	122
5000	500	3 A	130 x 60	1000	90
				1100	96
				1200	100
				1300	106
				1400	112
				1500	119
3000	500	3 A	150 x 35	1000	62
				1100	66
				1200	69
				1300	73
				1400	77
				1500	81
5800	500	3 A	150 x 50	1000	83
				1100	89
				1200	93
				1300	99
				1400	105
				1500	111
				1600	117
				1700	123
				1800	126
				1900	132
				2000	137
				2100	143
				2200	149
				2300	155
				2400	161

Options:

- ISO 2328 Class B mounting.
- Different fork sections and lenghts.
- Pin-type mounting.
- Forks for special applications.

Forks

ISO 2328 Mounting Class 4A



Range: 1900 Kg - 3000 Kg

Capacity for Fork Couple	Load Centre	Mounting Class	Fork Section	Fork Length	Weight of Single Fork
Q	*BP*	*ISO*	*A x E*	*L*	*W*
Kg	*mm*	*2328*	*mm*	*mm*	*Kg*
7000	600	4 A	150 x 60	1200	125
				1300	132
				1400	139
				1500	146
				1600	153
				1700	160
				1800	163
				1900	170
				2000	177
				2100	184
				2200	191
				2300	198
				2400	205
7000	600	4 A	200 x 50	1200	141
				1300	148
				1400	156
				1500	164
				1600	172
				1700	180
				1800	184
				1900	192
				2000	199
				2100	207
				2200	215
				2300	223
				2400	230

Capacity for Fork Couple	Load Centre	Mounting Class	Fork Section	Fork Length	Weight of Single Fork
Q	*BP*	*ISO*	*A x E*	*L*	*W*
Kg	*mm*	*2328*	*mm*	*mm*	*Kg*
8000	600	4 A	200 x 60	1200	168
				1300	177
				1400	186
				1500	196
				1600	205
				1700	214
				1800	219
				1900	228
				2000	238
				2100	247
				2200	256
				2300	266
				2400	275
12000	600	4 A	200 x 70	1200	196
				1300	207
				1400	218
				1500	228
				1600	240
				1700	251
				1800	256
				1900	267
				2000	278
				2100	289
				2200	300
				2300	311
				2400	322

Options:

- ISO 2328 Class B mounting.
- Different fork sections and lenghts.
- Pin-type mounting.
- Forks for special applications.

Non-standard ISO Forks & High Capacity Forks

Bolzoni Group offers a wide range of non-standard ISO forks, such as Pin-type forks, Quick detach forks, Peek-A-Boo forks, Gypsum forks, Folding forks, Brass/Stainless steel coated forks, Bolt-on forks, Full taper and polished forks, Drum handing forks and other special designs.
The range also includes **High Capacity Forks**, up to 220 tons. **High Capacity Forks** are usually used in the heavy-duty construction, in the harbor/railway station handling, in the mine/stone industry, as well as in the steel industry and in other industries requiring lifting and handling of heavy loads.
To meet the heavy-duty requirements of these industries, **High Capacity Forks** are manufactured with high quality steel and undergo the most severe tests required by the market. In particular we inspect the fork's hardness and perform the magnetic particle test, both on all weldings and fork heels.

With technical features meeting and even exceeding industry standards, Bolzoni **High Capacity Forks** are available in several sections, up to 400 x 200 mm.
Forks backheight, length and hooking system can be customized.
Find here below some commonly used sizes.

Width	Thickness	Capacity(pair)	Load center
mm	mm	kg	mm
200	90	22.000	600
200	100	26.000	600
250	90	26.000	600
250	100	32.000	600
300	90	30.000	600
300	100	38.000	600
300	110	48.000	600

Note: Max. forks length 4.000 mm

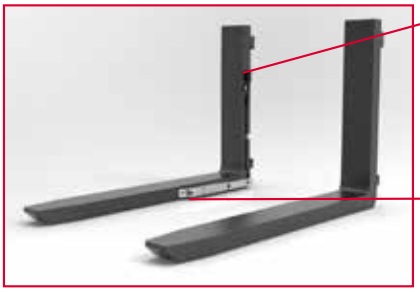
Vision Systems *Easy*-FORK

Easy-FORK Vision Systems significantly increase safety in the storage areas.

The Easy-Fork Vision Systems range includes the Side fork camera, the Tip fork camera.

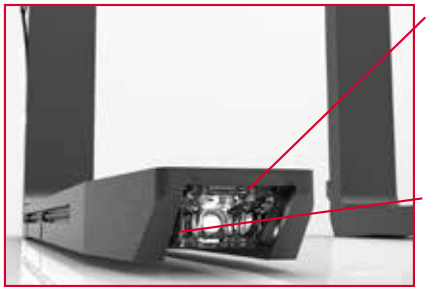
Thanks to the camera position, the driver can have a clear view on both forks, with a horizontal 52° viewing angle, while maintaining the correct ergonomic position on the seat. Camera images are displayed on a 7 inch. monitor installed inside the driver cabin. The connection between camera and monitor can be wireless (standard) or through a reinforced cable with cable-reel.

Easy-FORK factory kit and aftermarket solutions are available in customized and different configurations.



Fork mounted side camera

The high quality fork mounted side camera is a great help to the forklift truck driver during loading, unloading and warehousing operations, in particular when moving pallets at high levels on shelves.



Fork mounted tip camera

This type of solution allows the complete visibility upfront even when the load is on the forks. The robust IR camera has triple LED lights and is completely integrated in the fork tip. The connection cable remains inside the blade. Thanks to the led lights, the loading is made safe even in low light conditions.

In case of standard wireless transmission, the position of battery and transmitter is on top of the fork shank in a well-protected and easy to access location.

RAVAS

Benefit

- Installation within 5 minutes
- Completely wireless through bluetooth: no cabling
- Fork power supply by Li-ion compact battery packs
- Digital calibration
- Load warning for tip and side loading
- Easy to install in combination with fork positioners
- Efficient power management
- Tested 1,000,000 cycles at 125% of capacity
- Automatic compensation for mast tilt angle

iForks, the hugely successful RAVAS scale forks.

With only 58mm fork height and no external components on the fork shank, iForks-32 looks more and more like standard lift truck forks. The upgraded 3200 driver display offers attractive new features, like standard Bluetooth connectivity.

Lithium ion power: compact, green and reliable.

All scale components on the forks are hidden below and behind the fork shoe, creating an efficient look for iForks-32.

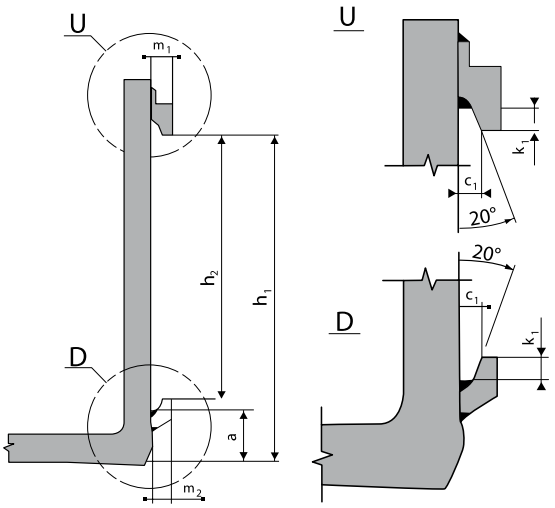
No external components on the fork shank, making iForks-32 even more easy to fit onto fork positioners. iForks-32 is only marginally higher than standard lift truck forks.

High accuracy: automatic compensation for mast tilt.

The 3200 weight indicator includes automatic tilt compensation, to automatically correct weight errors that occur when the mast tilts and the forks are not in horizontal position.The 3200 instrument automatically logs tip loads and overload events.

Lithium Standard with Bluetooth

Bluetooth 4.0 is a standard feature on the 3200, providing connectivity to tablets and smart phones. The RAVAS WeightsApp is available from Google Play and the App store. It acts as a remote display and remote control for the scale, but also allows you to download data from the 3200 instrument and send it via email.



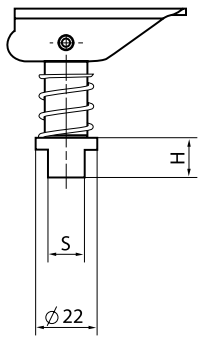
FEM/ISO Mounting Standards

The FEM / ISO mounting is the most common way of connecting forks to the lift-truck.
According to the lift truck capacity, the ISO standards are divided into 5 classes, each of them having a „A“ and „B“ version. The difference between version „A“ and „B“ is the clearance from the lower hook to the floor. Measurements are defined by the International Standard ISO 2328.

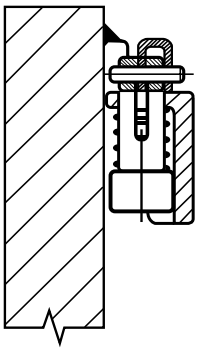
Main measurements are listed in the following chart:

Truck Rated capacity		Rated load center distance	Fork arm type	a	c_1	h_1	h_2 mm		m_1	m_2	k_1
Class	kg	mm		mm	mm +1,0/0	mm ± 3,0		mm tol.	max.	mm max.	mm min.
1	0-999	400	A	76	16,5	394	306	+1,0/0	28	26	14
			B	114		432					
2	1000-2500	500	A	76	16,5	470	382	+1,0/0	31	29	14
			B	152		546					
3	2501-4999	500	A	76	22	568	477	+1,5/0	40	38	17
			B	203		695					
4	5000-8000	600	A	127	26	743	598	+1,5/0	47	45	20
			B	254		870					
5*	8001-10999	600	A	127	35	830	680	+1,5/0	65	63	26
			B	257		960					

** Capacity ISO 5 are still often included in ISO 4.*



Kit assembly



Kit fit on fork

Hook Pin Kits

Hook pin is a mandatory locking device which prevents the fork from sliding off the carriage.

It is supplied as a kit, including the following components:
n. 1 pin
n. 1 lever
n. 1 spring pin
n. 1 spring

Forks in service on forklift trucks

General

Fork correct dimensioning and conditions are essential for safe, cost-effective and damage-free pallet handling operations. Therefore, a regular fork inspection system should be put in place to ensure perfect operating conditions. Inspections, repairs or replacements shall be carried out as a pair.

Inspections

Forks in use shall be inspected at intervals of 12 months or less depending on possible severe application, multi-shift operation and fork conditions. Regular inspections should be carried out by trained personnel. In case of detected damage, failures, deformations etc. forks shall be withdrawn from service and not be returned to service unless satisfactorily repaired or rerated.

Cracks

Check visually inner heel and top and bottom hook areas to detect possible cracks. Apply non-destructive crack detection tests if necessary. If surface cracks are detected, forks should be withdrawn from service.

Straightness

Check the straightness of the upper face of the blade and the front face of the shank. If deviation exceeds 0,5% of blade length or shank height, fork shall be withdrawn from service.

Angle

Check the fork upper face of the blade to load face of the shank. If fork has a deviation greater than 3 degrees from original specifications, fork shall be withdrawn from service

Height difference in fork tips

Check a pair of forks mounted on the fork carrier to detect difference in tip heights. If difference in tip heights exceeds 3% of the blade length, the pair of forks shall be withdrawn from service.

Locking devices

Check the fork positioning locking to ensure their normal operation and wear conditions. If any fault is found, fork shall be withdrawn from service.

Marking

Forks shall be marked with the nominal capacity and load center – according to ISO 2330. If marking is not clearly legible, fork shall be withdrawn from service.

Hooks

Check the fork hooks for possible wear, damage and cracks. If clearance between fork and fork carrier is visually excessive, forks shall be withdrawn from service.

Wear

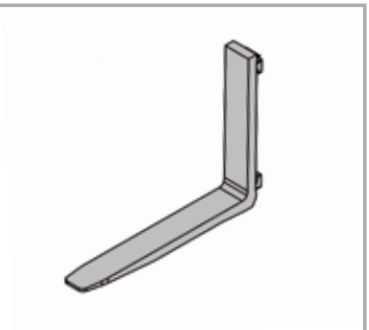
Forks must be checked regularly to ensure the heel thickness is not less than 10% of the original thickness as per ISO 5057. If the fork thickness is less that 10%, the fork must be replaced or rerated.

Repairs and tests

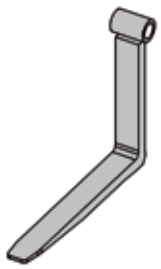
Repairs should be decided or carried out by authorized, expert personnel only, in accordance with recommendations of fork manufacturer. Do not repair surface cracks or wear by welding.
In case of repairs requiring fork re-setting, forks should be subjected to an appropriate heat-treatment.
Fork subjected to repairs different from repairs or replacements of the positioning lock and/or marking, can only return to service after having passed a yield test as described in ISO 2330.

A wide range of ISO mounting forks with different tip and taper shapes,
special application forks used in a variety of industries and handling situations:

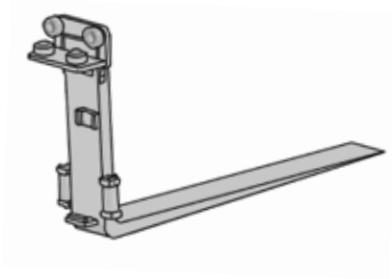
Bolzoni Group has the right fork for any application …



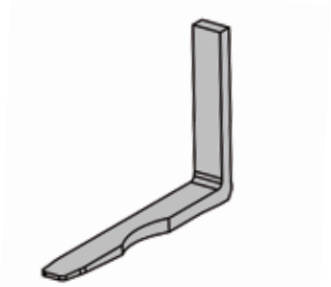
Standard FEM Fork



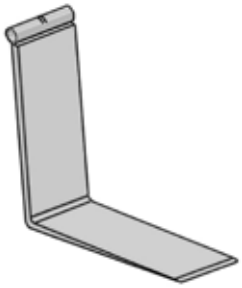
Pin-Type fork



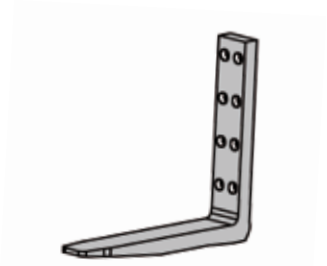
Customized Fork



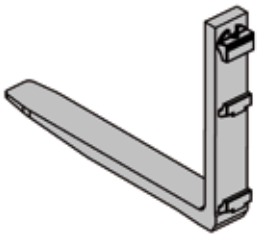
Drum Handling Fork



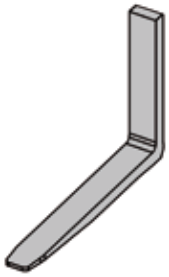
Polished and Tapered Fork



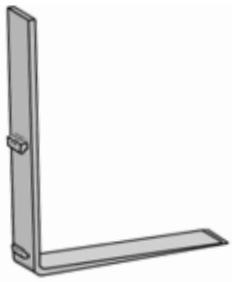
Bolt-on Fork



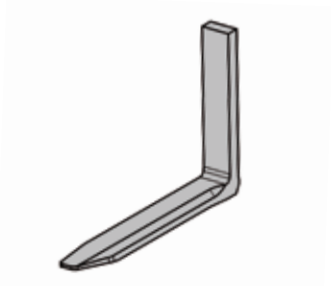
Fork with 3rd Hook



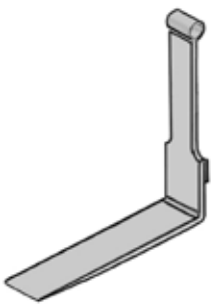
Blank Fork



Fork with High Back



Coil Handling Fork



Peek-A-Boo Fork

...and even more!

For any questions or for further information, please contact Bolzoni Group.

www.bolzonigroup.com

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