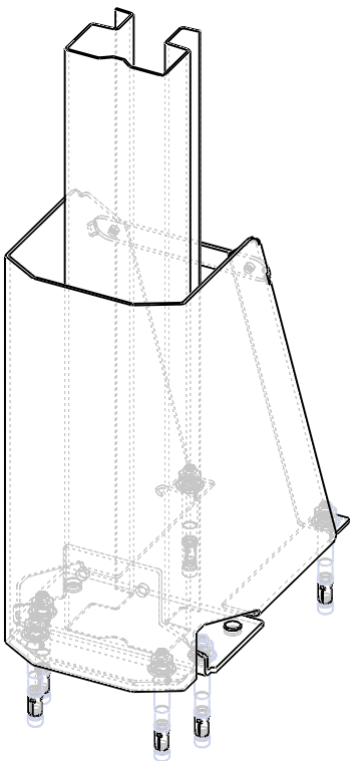


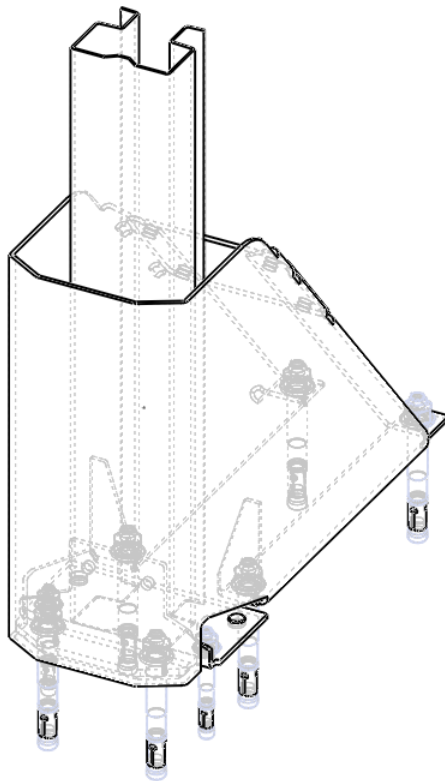
Installation instruction

Defender

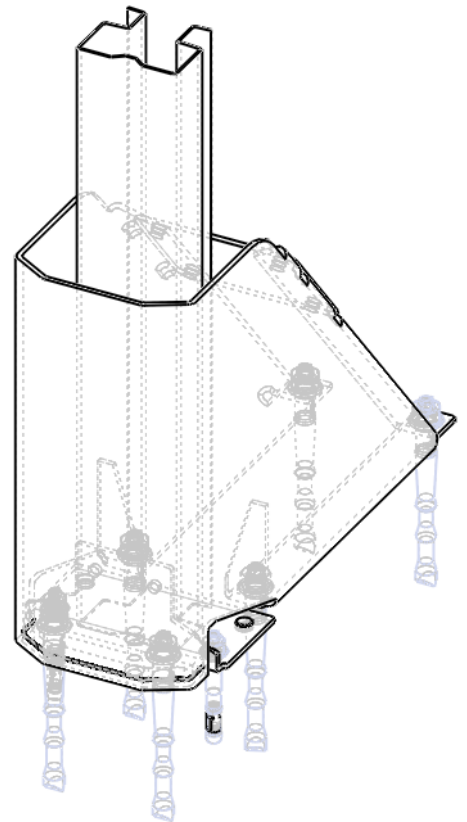
v1.0



Defender 800



Defender 1500



Defender 3000

If it can be done,
consider it done

Defender 800

MATERIAL

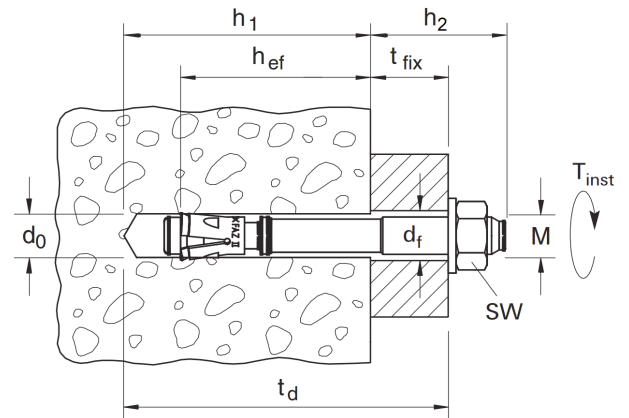
Parts list	Piece(s)
DEFENDER 800	1
FAZ-II M12/10	4
COUPLING 800	1
M8 taptite	2

Necessary tools

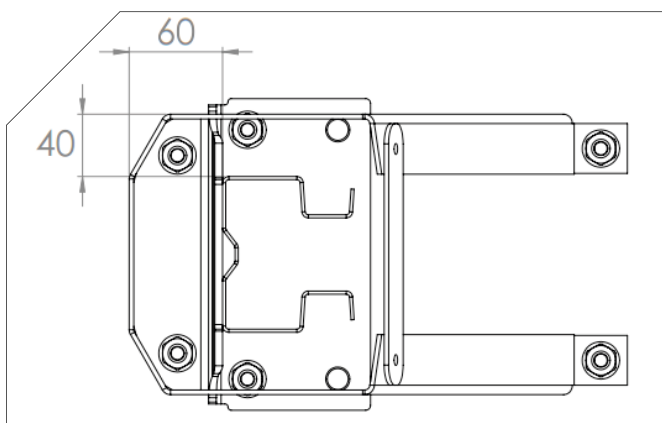
- (Impact)drill
- Drill bit 12mm
- Socket wrench 13mm
- Socket wrench 19mm
- ½" socket extension bar
- Measuring tape
- Vacuum cleaner
- Hammer

Drill instruction

		FAZ-II M12/10
Nominal drill hole diameter	d_0	12
Drill depth	h_1	80
Height anchor WRT concrete	h_2	30
Effective anchorage depth	h_{ef}	70
Minimal thickness concrete	h_{min}	140



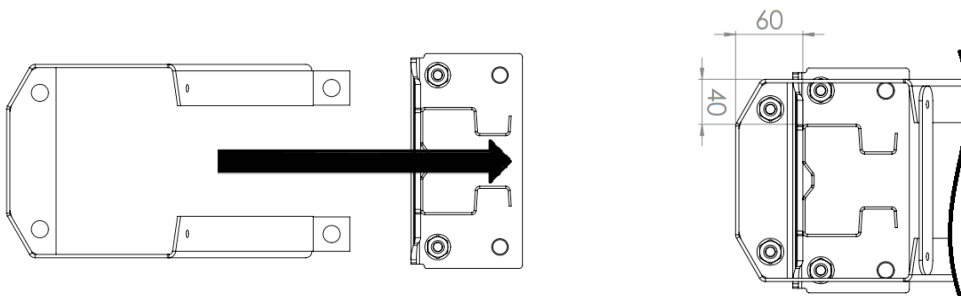
Position with respect to upright



Defender 800

INSTALLATION

1. Place the Defender around the upright as in the figure below.
2. Position the Defender according to the figure below using measuring tape.
3. Mark the concrete floor in the center anchoring holes. Tilt the Defender forwards in order to reach the frontal holes properly.
4. Remove the Defender
5. Drill the holes for the anchors in the concrete floor at the marked locations. It is very important to keep the drill vertical during drilling. Ensure that the drill depth is according to the specifications. Use an accessory if necessary. The correct drill depth for FAZ II M12/10 is 80mm.
6. Clean the holes properly using the vacuum cleaner
7. Hammer the anchors in position. The FAZ II M12/10 anchors should extend 30mm above the concrete floor.
8. Place the Defender over the anchors. Tilt the Defender forward in order to reach the frontal anchors and place washers and nuts. Then place the rear washers and nuts.
9. Use the drill, the extension bar and socket wrench 19 to tighten the nuts.
10. Check the applied torque using a torque wrench if necessary.
11. Install the coupling using the 2 M8 tapite's and socket wrench 13.



Defender 1500

MATERIAL

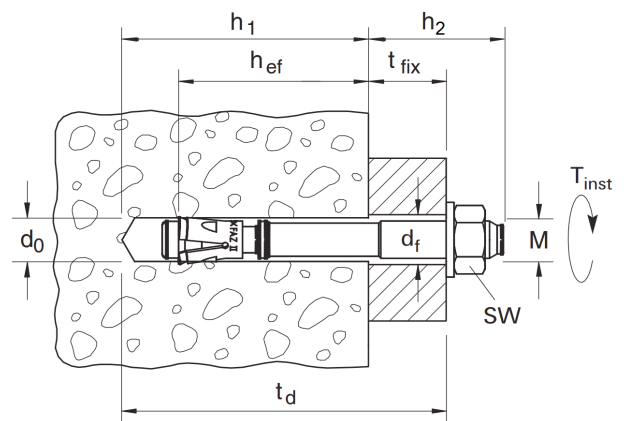
Parts list	Piece(s)
DEFENDER 1500	1
FAZ-II M16/25	6
Washer M16x30x8mm	6
COUPLING 1500	1
M10x25 bolt & nut	4

Necessary tools

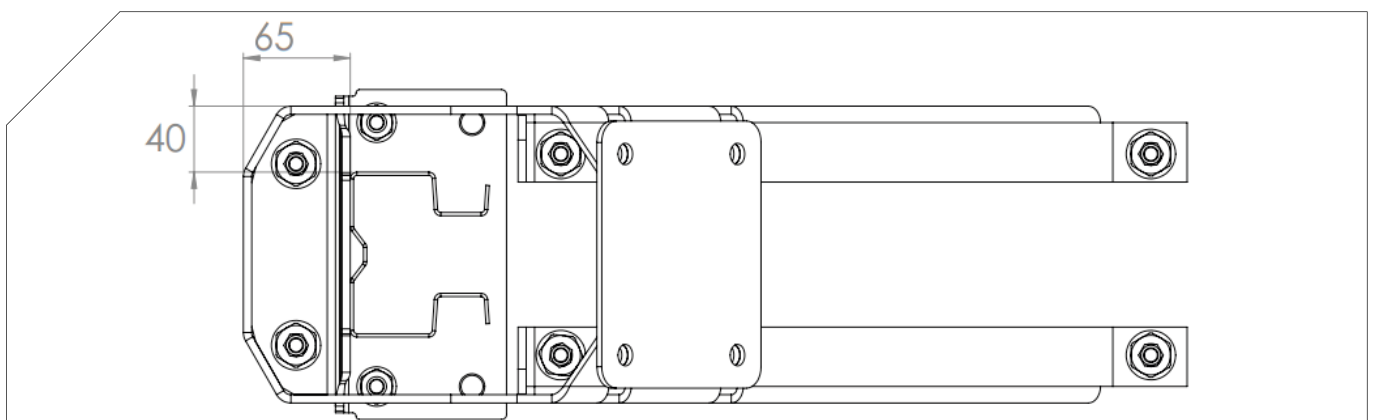
- (Impact)drill
- Drill bit 10mm for pre-drill
- Drill bit 16mm
- Socket wrench 17mm
- Socket wrench 24mm
- ½" socket extension bar
- Measuring tape
- Vacuum cleaner
- Drilling template (supplied)
- Hammer

Drill instruction

		FAZ-II M16/25
Nominal drill hole diameter	d_0	16
Drill depth	h_1	100
Height anchor WRT concrete	h_2	50
Effective anchorage depth	h_{ef}	85
Minimal thickness concrete	h_{min}	170



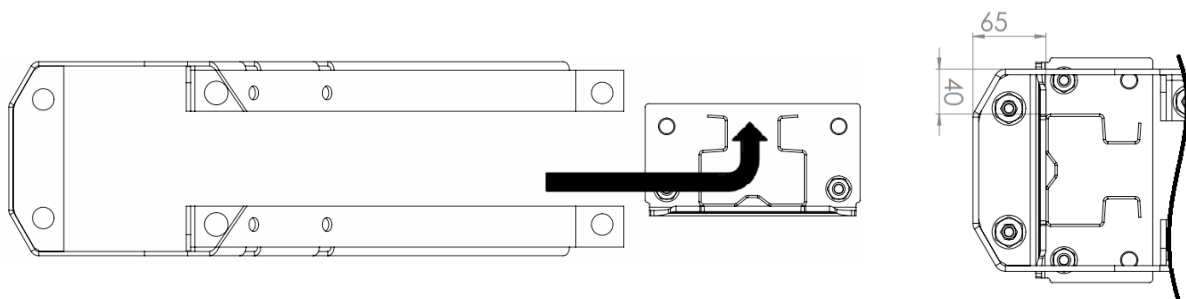
Position with respect to upright



Defender 1500

INSTALLATION

1. Place the drilling template around the upright. Ensure that the raised edges are in contact with the baseplate and horizontal, only then the template is in the correct position. Ensure that the drilling template stays put during drilling.
2. Pre-drill using drill bit 10 and the drilling template. It is very important to keep the drill vertical during drilling.
3. Remove the template. Use drill bit 16 to finish the holes. Again, it is very important to keep the drill vertical during drilling. Ensure that the drill depth is according to the specifications. Use an accessory if necessary. The correct drill depth for FAZ II M16/25 is 100mm.
4. Clean the holes properly using the vacuum cleaner.
5. Hammer the 4 anchors in position. The FAZ II M16/25 anchors should extend 50mm above the concrete floor.
6. Place the Defender over the anchors. Tilt the Defender forward in order to reach the frontal anchors and place washers and nuts. Then place the middle washers and nuts. Be sure to use the bigger washers.
7. Now drill the last two holes. Again use drill bit 10 to pre-drill the holes, then use drill bit 16 to drill the holes to the correct diameter. It is very important to keep the drill vertical during drilling. Ensure the correct drill depth. Clean the holes properly afterwards.
8. Hammer the last two anchors in position. The FAZ II M16/25 anchors should extend 50mm above the concrete floor. Place washers and nuts.
9. Use the drill, the extension bar and socket wrench 24 to tighten the nuts.
10. Check the applied torque using a torque wrench if necessary.
11. Install the coupling using 4x bolt M10x25 and nut, tighten using socket wrench 17.



Defender 3000

INSTALLATION

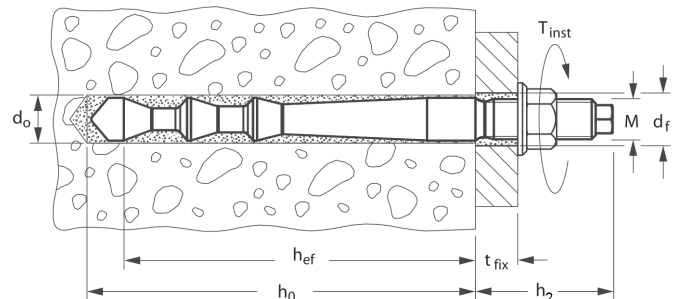
Parts list	Piece(s)	Parts list	Piece(s)
DEFENDER 3000	1	Washer M16x30x8mm	6
FHB-II-A L M16x125/30	6	COUPLING 3000	1
FHB-II-P 16x125	6	M10x25 bolt & nut	4

Necessary tools

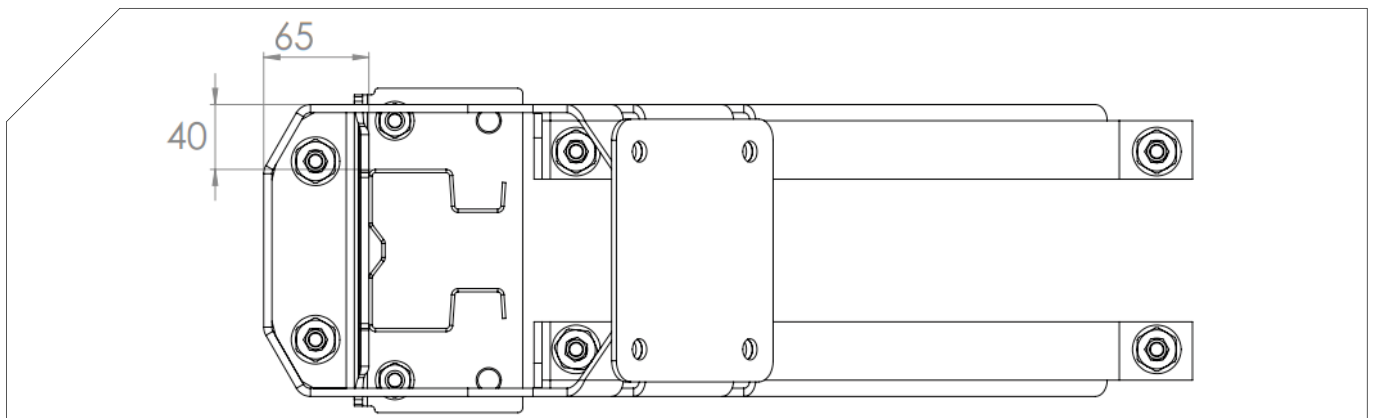
- (Impact)drill
- Drill bit 10mm for pre-drill
- Drill bit 18mm
- Socket wrench 17mm
- Socket wrench 24mm
- ½" socket extension bar
- Measuring tape
- Vacuum cleaner
- Drilling template (supplied)
- Hammer

Drill instruction

		FHB-II-A L
		M16x125/30
Nominal drill hole diameter	d_o	18
Drill depth	h_1	140
Height anchor WRT concrete	h_2	54
Effective anchorage depth	h_{ef}	125
Minimal thickness concrete	h_{min}	170



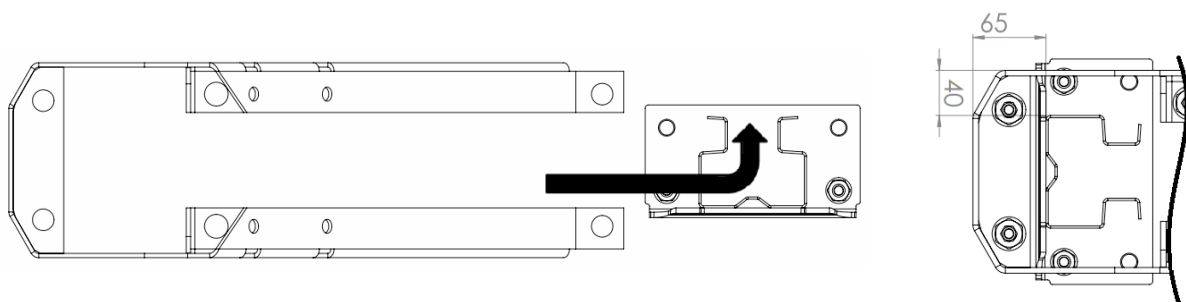
Position with respect to upright



Defender 3000

INSTALLATION

1. Place the drilling template around the upright. Ensure that the raised edges are in contact with the baseplate and horizontal, only then the template is in the correct position. Ensure that the drilling template stays put during drilling.
2. Pre-drill using drill bit 10 and the drilling template. It is very important to keep the drill vertical during drilling.
3. Remove the template. Use drill bit 18 to finish the holes. Again, it is very important to keep the drill vertical during drilling. Ensure that the drill depth is according to the specifications. Use an accessory if necessary. The correct drill depth for FHB II M16x125/30 is 140mm.
4. Clean the holes properly using the vacuum cleaner and steel brush.
5. Place the first 4 capsules in the holes.
6. Insert the anchors in a twisting motion so that the capsules break. Ensure proper mixing of the glue by rotating the anchors for some time. The FHB II M16x125/30 anchors should extend 54mm above the concrete floor.
7. Place the Defender over the anchors. Tilt the Defender forward in order to reach the frontal anchors and place washers and nuts, then place the middle washers and nuts. Be sure to use the bigger washers.
8. Now drill the last two holes. Again use drill bit 10 to pre-drill the holes, then use drill bit 18 to drill the holes to the correct diameter. It is very important to keep the drill vertical during drilling. Ensure the correct drill depth. Clean the holes properly afterwards.
9. Place capsules and anchors as the first four.
10. Respect the curing time of the anchors before applying load.
11. Use the drill, the extension bar and socket wrench 24 to tighten the nuts.
12. Check the applied torque using a torque wrench if necessary.
13. Install the coupling using the 4x bolt M10x25 and nut, tighten using socket wrench 17.



Pre-positioned installation with resin capsule

