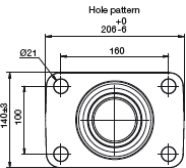


Installation

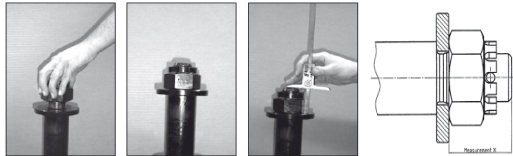
- Remove castle nut (42).
- Pull tension washer (40), rubber spring (36) and bar guide (38) from the drawbar (1).
- Fit bar guide (38) contrary to the driving direction to the inner face of the rear drawbeam.
- Caution: Max thickness of the drawbeam: 35mm!** Tighten the bar guide (38) together with the drawbeam using 4 bolts grade 8.8 and 4 safety nuts grade 8. The heads of the screws have to be mounted on the side of the coupling head (outer side of the drawbeam). Under screws and nuts you have to use washers DIN 125, hardness min 200HV.

Bolt Length should be:
 + bolt shank
 + washer thickness
 + nut length
 + at least 2 threads

Flange Design e1xe2 [mm]	d2 [mm]	Thread (standard thread)	Tightening Torque	Wrench Size [mm]
160 x 100	∅ 21	M20	410Nm	30



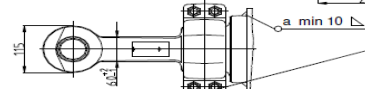
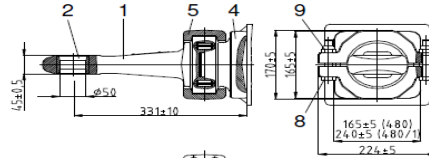
- Fit tension washer (40) without any other components of the towing device to the bar guide (1) and fully tighten the castle nut (42) by hand. Measure the dimension X (see figures 1 – 4). Remove castle nut (42) and tension washer (40) again.



- Fit the coupling head assembly including the front rubber spring (36) and thrust washer (37) to the bar guide (38). If required, regrease drawbar (1) and contact surfaces of thrust washer (37) and bar guide (38).
Caution: Never grease the rubber spring!
- Fit the rear rubber spring (36) and tension washer (40).
Caution: Never grease the rubber spring!
- Grease the contact surfaces of the castle nut (42) and tension washer (40). Screw on and tighten the castle nut (42) until the previously measured dimension X is reached again and secure by means of a cotter pin (43). Min. tightening torque of the castle nut M45x3: **700 Nm** using a wrench or nut with a wrench size of 70 mm.
To reach the dimension X and the next hole position for the cotter pin even higher tightening torques may be required.
Caution: Always tighten to the next hole position.
- Fit and protective plastic cap (44) carefully.
- Straighten the coupling.
- For a retro-fit please refer to the relevant statutory regulations.

RINGFEDER Type 480

Part # 9994939, type 480
 Flange drawbar or drawbar type 480 with drawbar eye ace.



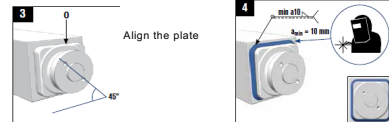
Pos.	Stk.	Order-Nr.	Designation
1	1	9994939	Towing eye
2	1	10996597	Towing eye bush
3	1		Locating Pins
4	1		Fastening plate
5	1		Sleeve
6	1		ID Plate
7	1		Rivet
8	4		Bolt
9	4		Nut

EC type approval no.: e1*94/20*0166*00

D 50- X	D	320 kN
e1	Dc	135kN
00-0166	S	1000kg / 2500kg
	V	75kN

Mounting Instructions for Drawbar Eye Type 480

When fitting (replacing) the drawbar eye please attend to the relevant statutory regulations and the particular information from the vehicle manufacturers.
 Fastening plate, Pos.4, made of material St 42-3 DIN 17100 is to weld on so that the flange side is above which is marked with „O“ (circular welding with a = 10mm min.



Weld on flange plate on all sides.

Twist off the nuts VM 16 DIN 980 quality 8 from the screws M16 quality 8.8 at the sleeve (Pos.5) and pull off the distance sleeves.



Before welding follow the welding regulations!

Afterwards fit loading pins to also prevent rotation and screw up all 4 nuts and tighten them alternatively and regularly till the tightening torque of 180Nm. After the first 1000 – 2000 miles the tightening torque of the screws has to be checked. If necessary tighten again.

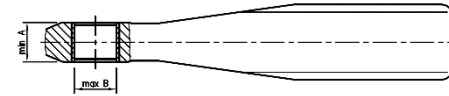


Align Pre-tighten bolts cross-wise.

Torque bolts in sequence shown.

Mount & Test Instructions for Drawbar Eyes

∅40mm (part # 9995404) & ∅50mm (part #6991394)



	A (mm)	B
∅40	28.0	41.5
∅50	42.5	51.5

Welding of the 'Weld-In' Drawbar Eye

The welding equipment has to be so chosen that the hardness increase in the heat effected zone does not exceed 300HV 30 (eg. preheat for welding to approximately 250°C).

The welding deposit must show a tensile strength of 510-650 N/mm², eg. welding rod, Austarc 18t, CIG, Ferrocraft 61. Welding may only be affected in the longitudinal direction of the eye. Large end craters or penetration notches are not admissible.

Check for Wear

The thickness of the drawbar eye must not be less than A mm. Exchange drawbar eye if maximum wear is exceeded. The inside diameter of the bush may be B mm maximum. Replace bush if this wear is exceeded. Drawbar eyes which have been bent or which show cracks or any deformation should be replaced immediately.

When replacing bush or if bush is loose in eye **DO NOT WELD** in place replace the drawbar.

Gauges

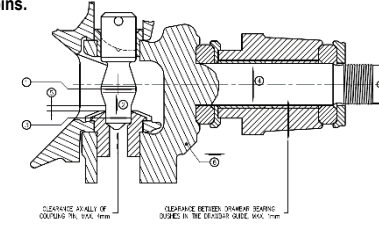
Part # 14995440



Gauge suitable for checking 40/50mm couplings and 40/50mm drawbar eye bushes.

Wear Limits

Maximum wear limit for wearing components of Ringfeder automatic pin couplings of 40mm and 50mm pins.



- Wear limit of 50mm coupling bolt 46.5mm minimum
Wear limit of 50mm coupling bolt 36.5mm minimum
- With Pin Locked in engaged position. Maximum play 5mm.
- Maximum diameter of guide bush 36.5mm. Maximum clearance 2.5mm.
- Maximum clearance 1mm
- Maximum wear on wear plate 4mm
- When attempting to move coupling fore and aft by hand no play allowed

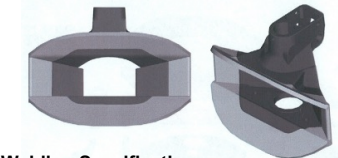
Important Note:

Whenever changing rubber springs check for correct clearance between drawbar bushes and drawbar.
 Excessive clearance could contribute to premature rubber springs wear items. Also, always ensure M45 castellated nut is tightened to a torque of 500Nm and pinned with split pin and protecting cap replaced.

Areas for Welding

In the lighter (frontal) area welding is allowed, in the darker area welding is forbidden!

Note: Tack welding to secondary lock replacement exempt.



Welding Specifications

- Welding process: pin electrode for process 111 (DIN EN 24063)
- Filler metal for welding of cast iron, unalloyed a low-alloyed cast iron materials destination DW8573-1 E Ni BG12 Kestra Gold.
- Shielding gas: no
- Diameter of electrode: - 3.2mm
- Electrical connection:
= (DC) +
100 Ampere
18 Volts