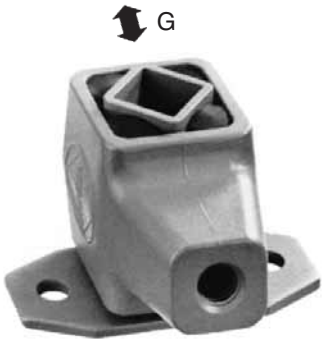
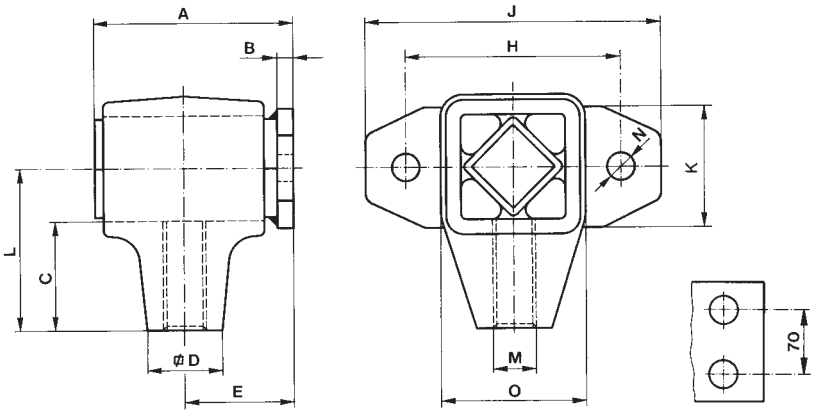
OSCILLATING MOUNTING TYPE AU





Fixing flange
AU 60

Art. No.	Type	G	n_{err}	Md_d	A	B	C	D	E	H	J	K	L	M	N	O	Weight in kg
07 011 001	AU 15	100	1200	0.44	50	4	29	20	28	50	70	25	40	M10	7	33	0.19
07 021 001	AU 15 L	100	1200	0.44	50	4	29	20	28	50	70	25	40	M10L	7	33	0.19
07 011 002	AU 18	200	1200	1.32	62	5	31.5	22	34	60	85	35	45	M12	9.5	39	0.34
07 021 002	AU 18 L	200	1200	1.32	62	5	31.5	22	34	60	85	35	45	M12L	9.5	39	0.34
07 011 003	AU 27	400	800	2.60	73	5	40.5	28	40	80	110	45	60	M16	11.5	54	0.65
07 021 003	AU 27 L	400	800	2.60	73	5	40.5	28	40	80	110	45	60	M16L	11.5	54	0.65
07 011 004	AU 38	800	800	6.70	95	6	53	42	52	100	140	60	80	M20	14	74	1.55
07 021 004	AU 38 L	800	800	6.70	95	6	53	42	52	100	140	60	80	M20L	14	74	1.55
07 011 005	AU 45	1600	800	11.60	120	8	67	48	66	130	180	70	100	M24	18	89	2.55
07 021 005	AU 45 L	1600	800	11.60	120	8	67	48	66	130	180	70	100	M24L	18	89	2.55
07 011 006	AU 50	2500	600	20.40	145	10	70	60	80	140	190	80	105	M36	18	93	6.70
07 021 006	AU 50 L	2500	600	20.40	145	10	70	60	80	140	190	80	105	M36L	18	93	6.70
07 011 007	AU 60	5000	400	38.20	233	15	85	80	128	180	230	120	130	M42	18	116	15.70
07 021 007	AU 60 L	5000	400	38.20	233	15	85	80	128	180	230	120	130	M42L	18	116	15.70

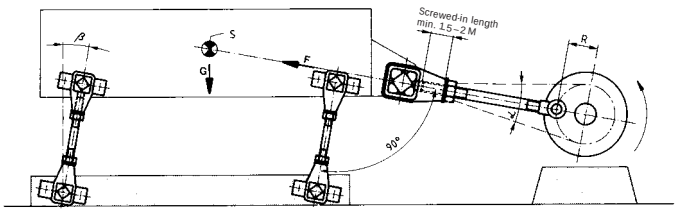
G = max. loading in N per unit or rocker suspension
n_{err} = max. frequency in min^{-1} at ∢ 10°, from zero ∢ ± 5°
Md_d = dynamic torque Nm / ° at ∢ ± 5°, in frequency range 300 – 600 min^{-1}
Mountings for higher loads available on request

Material Structure

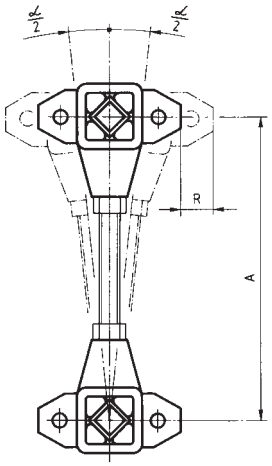
The housings up to type AU 45 are made out of light metal die cast, from type AU 50 in nodular cast; inner square and fixation flange in steel.

Guidelines for Fitting

The rocker angle β of the oscillating mounting is 10° to 30° according to experience, depending largely on the conveying performance and the material to be moved. To secure optimal performance the troughs, screens etc. must be designed stiff and rigid. If the available space does not allow the mountings to be fitted from the side, they may also be placed between the trough and the base frame. Here the threaded connecting rod allows optimal levelling in all cases.



OSCILLATING MOUNTING TYPE AU



To calculate the dynamic spring value of an oscillating mounting, for example 2 AU 27, operating close to resonance.

Given:

Dynamic torque Md_d = 2.6 Nm / °
Mounting with distance A between centres = 200 mm

Wanted:

Dynamic spring value c_d

$$c_d = \frac{Md_d \cdot 360 \cdot 1000}{A^2 \cdot \pi} = \frac{2.6 \cdot 360 \cdot 1000}{200^2 \cdot \pi} = 7.4 \text{ N / mm}$$

Typical Calculation

Given:

Weight of trough = 200 kg
Material on trough = 50 kg
of this 20 % coupling effect = 10 kg
Total weight of oscillating mass m
(trough and coupling effect) = 210 kg
Eccentric radius R = 14 mm

Speed n_{err} = 320 min^{-1}

Oscillating machine factor $K = \frac{\left(\frac{2\pi}{60} \cdot n_{err}\right)^2 \cdot R}{9810}$ = 1.6

Total spring value $c_t = m \cdot \left(\frac{2\pi}{60} \cdot n_{err}\right)^2 \cdot 0.001$ = 235.8 N / mm

Wanted:

Number of oscillating mountings each comprising 2 elements type AU 27

a) in resonance operation

Here the total spring value of the mountings must be about 10 % above the total spring value c_t of the installation. From this follows:
Spring value c_d of an oscillating mounting consisting of 2 AU 27 spaced at 200 mm = 7.4 N / mm

Number of mountings $z = \frac{c_t}{0.9 \cdot c_d} = \frac{235.8}{0.9 \cdot 7.4} = 35.4$ pieces

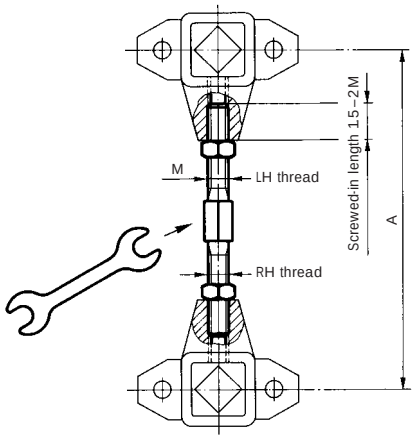
Selected: 36 mountings each comprising 2 AU 27 = 72 x AU 27

b) without resonance operation

Here the total weight G must be taken up by the total number of oscillating mountings. The admissible loading of one mounting comprising 2 AU 27 = 400 N

Number of mountings $z = \frac{m \cdot g}{G} = \frac{210 \cdot 9.81}{400} = 5.15$ pieces

Selected: 6 oscillating mountings each comprising 2 AU 27 = 12 x AU 27

Connecting Rod

The connecting rod is provided by the customer, preferably with left- / right-hand thread. Together with the associated oscillating mountings AU the distance between elements A can then be levelled steplessly. Lower costs may be attained, though at the price of rougher levelling, by using commercial rods with right-head thread only. In any case the appropriate screwed-in length must be observed.