

Worm Gear Units H/I

Housing: Aluminium die-cast, with connecting threads on both input and output sides. With mounting holes on all other sides.

Worm shaft: hardened and ground.

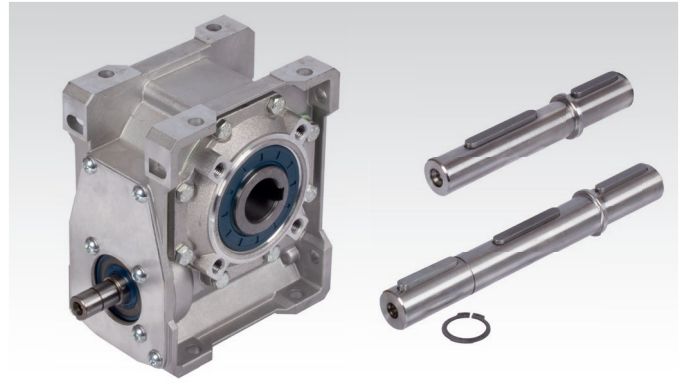
Worm Gear: Bronze, on cast iron hub.

Lubrication: synthetic oil (lubricated for life).

Lightweight, high quality model range, 5 sizes, centre distance 31.5, 40, 50, 63 and 75 mm. Size 90 and 110 on request. The gearboxes can be used without ventilation and independent from the mounting position.

Output shaft push-in type: The basic gearbox version has a hollow shaft. They can, however, also be supplied with a push in type output shaft (single sided, to be used left and right, or double sided).

These output shafts have their own product No. and have to be ordered separately.



a = Centre distance
i = Ratio
 n_1, n_2 = Input/Output speed

T_2 = Output torque
 $P_{1\text{perm}}$ = Input power
 η = Operating efficiency

Ordering Details: e.g.: Product No., Type, Size, Ratio

If required: Output Shaft Single Sided (or Double Sided), Prod No., Size

Product No.	a mm	i_{ist}	$n_{1\text{max}}$ min^{-1}	n_2 min^{-1}	$T_{2\text{perm}}$ Nm	$P_{1\text{perm}}$ kW	η	Weight kg	A c c e s s o r i e s *	
									Product No. Single-Sided Output Shaft	Product No. Double-Sided Output Shaft
422 031 07	31,5	7,5	1400	187	21	0,49	0,84	1,4	422 031 01	422 031 02
422 031 10	31,5	10	1400	140	22	0,40	0,82	1,4	422 031 01	422 031 02
422 031 15	31,5	15	1400	93	22	0,28	0,77	1,4	422 031 01	422 031 02
422 031 20	31,5	20	1400	70	19	0,19	0,72	1,4	422 031 01	422 031 02
422 031 25	31,5	25	1400	56	21	0,18	0,69	1,4	422 031 01	422 031 02
422 031 30	31,5	30	1400	47	20	0,15	0,66	1,4	422 031 01	422 031 02
422 031 40	31,5	40	1400	35	21	0,13	0,59	1,4	422 031 01	422 031 02
422 031 50	31,5	50	1400	28	19	0,10	0,55	1,4	422 031 01	422 031 02
422 031 65	31,5	65	1400	22	20	0,09	0,51	1,4	422 031 01	422 031 02
422 031 80	31,5	80	1400	18	17	0,06	0,48	1,4	422 031 01	422 031 02
422 031 11	31,5	100	1400	14	14	0,05	0,45	1,4	422 031 01	422 031 02
422 040 07	40	7,5	1400	187	40	0,92	0,85	2,4	422 040 01	422 040 02
422 040 10	40	10	1400	140	41	0,73	0,83	2,4	422 040 01	422 040 02
422 040 15	40	15	1400	93	42	0,52	0,79	2,4	422 040 01	422 040 02
422 040 20	40	20	1400	70	40	0,39	0,76	2,4	422 040 01	422 040 02
422 040 25	40	25	1400	56	35	0,29	0,72	2,4	422 040 01	422 040 02
422 040 30	40	30	1400	47	41	0,29	0,68	2,4	422 040 01	422 040 02
422 040 40	40	40	1400	35	38	0,22	0,64	2,4	422 040 01	422 040 02
422 040 50	40	50	1400	28	38	0,19	0,59	2,4	422 040 01	422 040 02
422 040 65	40	65	1400	22	35	0,15	0,54	2,4	422 040 01	422 040 02
422 040 80	40	80	1400	18	33	0,12	0,52	2,4	422 040 01	422 040 02
422 040 11	40	100	1400	14	28	0,08	0,49	2,4	422 040 01	422 040 02
422 050 07	50	7,5	1400	187	70	1,60	0,86	4,0	422 050 01	422 050 02
422 050 10	50	10	1400	140	73	1,30	0,84	4,0	422 050 01	422 050 02
422 050 15	50	15	1400	93	74	0,90	0,80	4,0	422 050 01	422 050 02
422 050 20	50	20	1400	70	75	0,71	0,78	4,0	422 050 01	422 050 02
422 050 25	50	25	1400	56	65	0,51	0,74	4,0	422 050 01	422 050 02
422 050 30	50	30	1400	47	66	0,46	0,71	4,0	422 050 01	422 050 02
422 050 40	50	40	1400	35	69	0,38	0,67	4,0	422 050 01	422 050 02
422 050 50	50	50	1400	28	70	0,33	0,62	4,0	422 050 01	422 050 02
422 050 65	50	65	1400	22	64	0,25	0,58	4,0	422 050 01	422 050 02
422 050 80	50	80	1400	18	60	0,20	0,54	4,0	422 050 01	422 050 02
422 050 11	50	100	1400	14	55	0,16	0,51	4,0	422 050 01	422 050 02
422 063 07	63	7,5	1400	187	120	2,70	0,87	6,6	422 063 01	422 063 02
422 063 10	63	10	1400	140	127	2,20	0,85	6,6	422 063 01	422 063 02
422 063 15	63	15	1400	93	130	1,60	0,81	6,6	422 063 01	422 063 02
422 063 20	63	20	1400	70	144	1,30	0,80	6,6	422 063 01	422 063 02
422 063 25	63	25	1400	56	118	0,90	0,77	6,6	422 063 01	422 063 02
422 063 30	63	30	1400	47	142	0,95	0,73	6,6	422 063 01	422 063 02
422 063 40	63	40	1400	35	150	0,79	0,69	6,6	422 063 01	422 063 02
422 063 50	63	50	1400	28	122	0,55	0,65	6,6	422 063 01	422 063 02
422 063 65	63	65	1400	22	122	0,45	0,61	6,6	422 063 01	422 063 02
422 063 80	63	80	1400	18	113	0,36	0,58	6,6	422 063 01	422 063 02
422 063 11	63	100	1400	14	102	0,28	0,53	6,6	422 063 01	422 06302
422 075 07	75	7,5	1400	187	180	4,0	0,87	11	422 075 01	422 075 02
422 075 15	75	15	1400	93	202	2,4	0,83	11	422 075 01	422 075 02
422 075 20	75	20	1400	70	226	2,0	0,81	11	422 075 01	422 075 02
422 075 30	75	30	1400	47	220	1,5	0,74	11	422 075 01	422 075 02
422 075 50	75	50	1400	28	211	0,92	0,67	11	422 075 01	422 075 02
422 075 65	75	65	1400	22	195	0,70	0,63	11	422 075 01	422 075 02
422 075 11	75	100	1400	14	162	0,43	0,56	11	422 075 01	422 075 02

Dimensions table page 730. For gearbox size 75, $i = 10:1, 25:1, 40:1$ and $80:1$ available on request.

* More details see page 729.

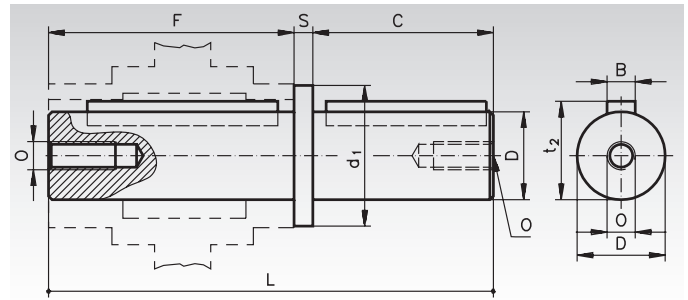
Accessories Worm Gear Units H/I

Push-In Type Output Shafts, Single Sided

Material: Steel.

To change the gearboxes H/I over from hollow shaft to solid shaft. The shaft is only pushed in and secured with the enclosed cover disc and mounting screw. The shaft can be pushed in either left or right.

Ordering details: e.g.: Prod. No. 422 031 01, Push-In Type Output Shaft, Single-Sided, Gearbox Size 031



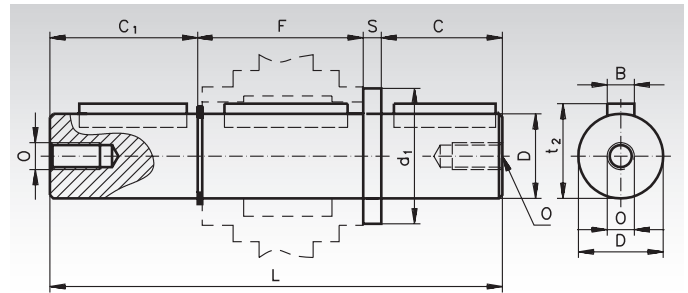
Product No.	Gearbox Size	B mm	C mm	D ^{h6} mm	d ₁ mm	F mm	L mm	O mm	S mm	t ₂ mm	Weight kg
422 031 01	031	5	30	14	18,5	62	94,5	M6x16	2,5	16,3	0,16
422 040 01	040	6	40	18	23,5	77	120,0	M6x16	3,0	20,8	0,27
422 050 01	050	8	50	25	31,5	90	143,5	M8x22	3,5	28,3	0,59
422 063 01	063	8	50	25	31,5	111	165,0	M8x22	4,0	28,3	0,68
422 075 01	075	8	60	28	34,5	119	183,0	M8x22	4,0	31,3	1,05

Push-In Type Output Shafts, Double Sided

Material: Stahl.

To change the gearboxes H/I over from hollow shaft to double-sided solid shaft. The shaft is only pushed in and secured with the enclosed retaining ring.

Ordering details: e.g.: Prod. No. 422 031 02, Push-In Type Output Shaft, Double Sided, Gearbox Size 031



Product No.	Gearbox Size	B mm	C mm	C ₁ mm	D ^{h6} mm	d ₁ mm	F mm	L mm	O mm	S mm	t ₂ mm	Weight kg
422 031 02	031	5	30	29,0	14	18,5	64,0	125,5	M6x16	2,5	16,3	0,18
422 040 02	040	6	40	38,8	18	23,5	79,2	161,0	M6x16	3,0	20,8	0,32
422 050 02	050	8	50	50,0	25	31,5	93,2	196,7	M8x22	3,5	28,3	0,77
422 063 02	063	8	50	48,8	25	31,5	113,2	216,0	M8x22	4,0	28,3	0,98
422 075 02	075	8	60	58,8	28	34,5	121,0	244,0	M8x22	4,0	31,3	1,49

Permissible Radial and Axial Forces

The values are calculated for the centre of the output shaft end, also calculating in the transmission ratio. F_R is the max. radial force for $F_A = 0$.

F_A is the max. permissible axial force for $F_R = 0$.

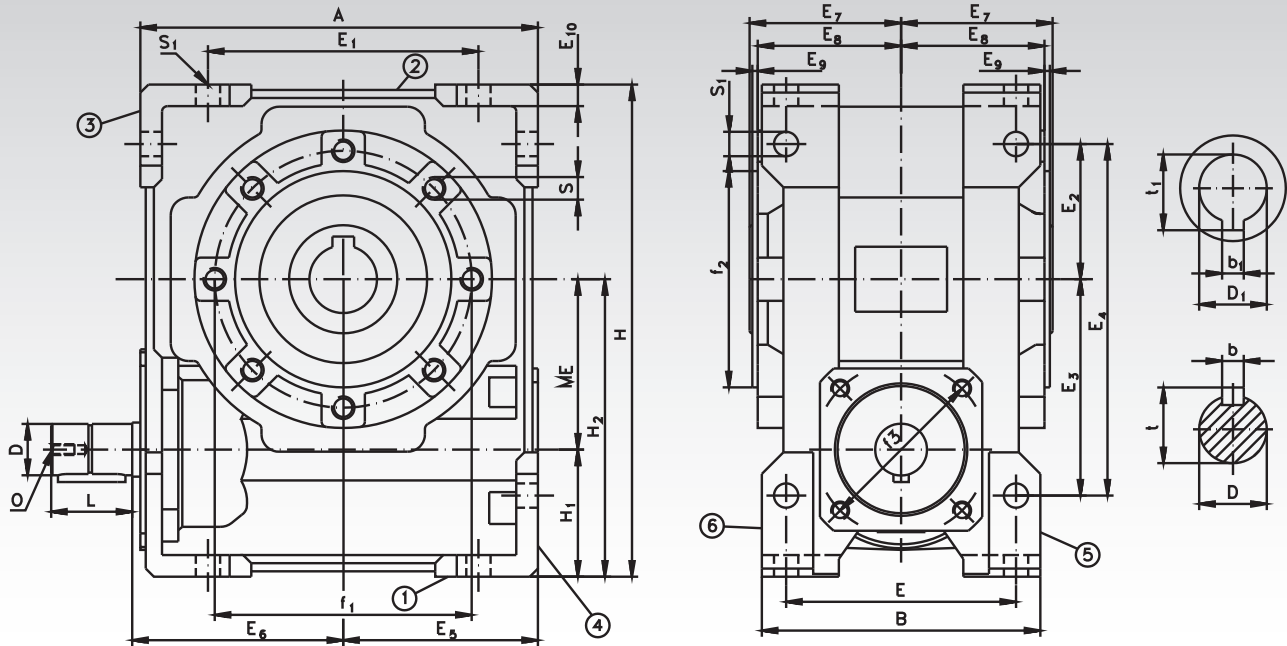
Gearbox Size	i = 7.5		i = 10		i = 15		i = 20		i = 25		i = 30		i = 40		i = 50		i = 65		i = 80		i = 100	
	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N	F_R N	F_A N
031	750	150	775	115	800	160	850	170	900	180	950	190	1000	200	1100	220	1200	240	1300	260	1450	290
040	1150	230	1200	240	1250	250	1350	270	1500	300	1600	320	1700	340	1800	360	1950	390	2100	420	2300	460
050	1200	240	1400	280	1600	320	1900	380	2100	420	2500	500	2800	560	3000	600	3200	640	3200	640	3200	640
063	1250	250	1700	340	1750	350	2000	400	2500	500	2700	540	3000	600	3250	650	3500	700	3700	740	3900	780
075	1300	260	1900	380	2300	460	2500	500	3000	600	3200	640	3500	700	3800	760	4100	820	4400	880	4700	940

Lubricant Volume in Litre (dm³)

The gearboxes are lubricated for life using synthetic oil. Under normal operating conditions, no oil change is required. The lubricant volume is identical for all mounting positions.

Size	031	040	050	063	075
Oil quantity	0.05	0.07	0.15	0.4	0.6

Dimensions Table Worm Gear Units H/I

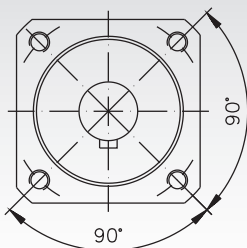


Size	Centre distance mm	Shaft dimensions							Housing dimensions							
		D ₁ ⁶ mm	b mm	t mm	O mm	D ₁ ^{H7} mm	b ₁ mm	t ₁ mm	A mm	B mm	E mm	E ₁ mm	E ₂ mm	E ₃ mm	E ₄ mm	E ₅ mm
031	31,5	9	3	10,2	M4x10	14	5	16,3	80	56	44	54	27	44	71	40
040	40,0	11	4	12,5	M4x12	18	6	20,8	105	71	60	70	35	55	90	50
050	50,0	14	5	16	M5x13	25	8	28,3	125	85	70	80	40	64	104	60
063	63,0	19	6	21,5	M8x20	25	8	28,3	147	103	85	100	50	80	130	72
075	75,0	24	8	27	M8x20	28	8	31,3	176	112	90	120	60	93	153	86

Size	E ₆ mm	E ₇ mm	E ₈ mm	E ₉ mm	E ₁₀ mm	f ₁ [*] mm	f ₂ ^{h8} mm	f ₃ mm	H mm	H ₁ mm	H ₂ mm	L mm	ME mm	S mm	S ₁ mm	Weight kg
031	44,5	31,5	29,0	1,5	5,5	65	55	35,4	97	25,5	57	15	31,5	M6x8	6,5	1,4
040	57,5	39	36,5	1,5	6,0	75	60	42,4	125	35	75	20	40,0	M6x10	6,5	2,4
050	67,5	46	43,5	1,5	7,0	85	70	53,7	150	40	90	25	50,0	M8x10	8,5	4,0
063	77,5	56	53,0	2,0	8,0	95	80	60,8	182	47	110	30	63,0	M8x14	9,0	6,6
075	95,0	60	57,0	2,0	10	115	95	70,7	219,5	58,5	133,5	40	75,0	M8x14	11	11,1

Mounting Holes on the Drive Side

Size 31: 4 Threads M5
 Size 40: 4 Threads M5
 Size 50: 4 Threads M6
 Size 63: 4 Threads M6
 Size 75: 4 Threads M8



Ø of circle with holes: See size f₃ in table.

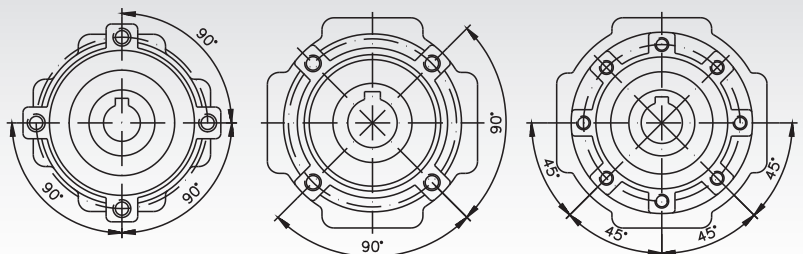
Mounting Holes on the Output Side

Size 031
 4 Threads M6 x 8

Size 040
 4 Threads M6 x 10

Size 063 and 075
 8 Threads M8 x 14

Size 050
 4 Threads M8 x 10



Ø of circle with holes: See size f₁ in table.