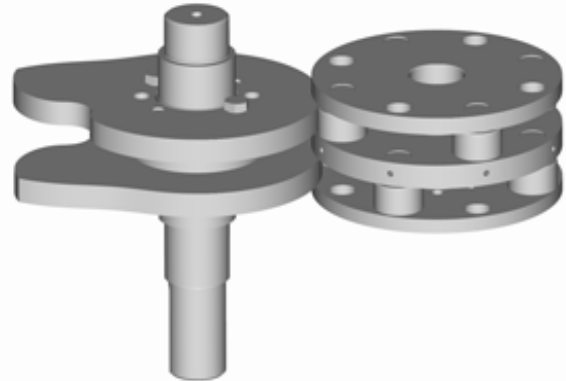


IMC Parallel Index Drives are ideal for high-speed applications or for actuation-type applications such as driving a linkage or a conveyor. Parallel Index Drive features include:

- **Hardened and ground conjugate cams**
- Yoke-mounted, preloaded cam followers are non-reversing for **high capacity** and **speed capability**
- Whole or fractions stops, oscillating and **complex custom motions** are available
- **Long Transfer Distances** achieved with simple linkages.
- **Greatest** power transmission **efficiency** when compared to other indexing geometries.
- Preloaded, tapered roller bearings for **rigidity** and **backlash-free** operation.



IMC Parallel Index Drives feature two plate cams mounted as a conjugate pair. The follower wheel has one cam follower above and another below the center line of the input, producing a preloaded locking action. Parallel indexers are capable of producing high speeds, large output displacements and low number of stops. Their input and output shaft design is best suited for any type of inline conveying system, shuttle drives and lift-and-carry mechanisms.

High Speed

Designed for high speed indexing, IMC Parallel Series index drives are capable of up to 2,000 indexes per minute. They feature cam followers that do not reverse rotation during index and that remain preloaded throughout the entire motion.

Rugged Design

IMC cam followers are yoke mounted and supported on both ends, making the Parallel Series capable of absorbing momentary overloads. Their special preloaded, tapered roller bearings add rigidity and backlash-free operation.

Design and Operation Efficiency

Parallel Indexers provide greater efficiency in power transmission and a higher torque-to-dollar ratio than alternative methods of motion.

Universal Mounting / Double Shafts

The Parallel Indexer can be mounted on any of six sides. The indexer is also available with double input and/or output shafts.

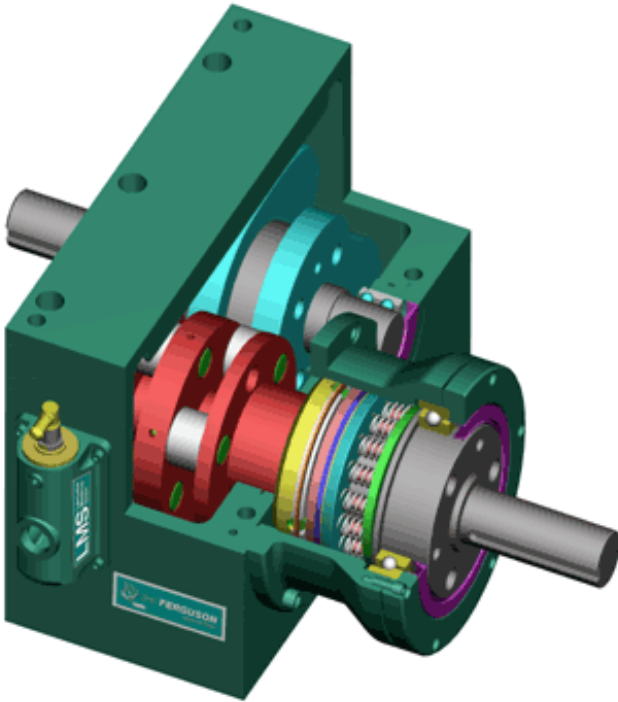
Application Versatility

IMC Parallel Series Index Drives are available in whole or fractional stops in over 1,000 standard and special



motions including Oscillating motions. They provide higher speed and longer linear transfers when compared to other motion devices such as air, hydraulic and geneva mechanisms.




Guardian



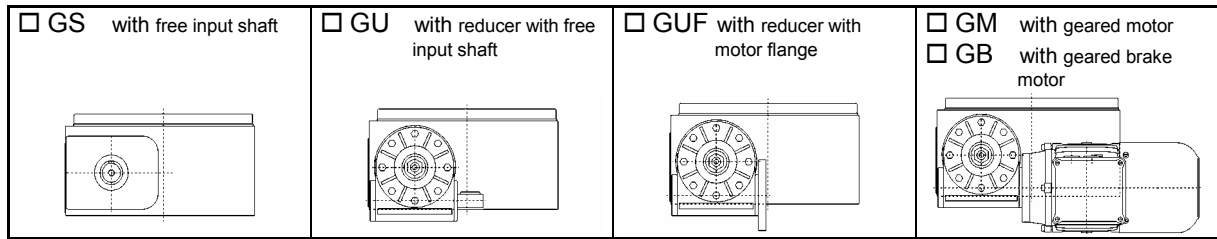
The Guardian Series parallel index drive includes all the features of the **Parallel series** along with an **Internal Torque Limiting Clutch**. The internal clutch provides design and assembly flexibility and reduces critical debugging time. Also ideal for harsh environments.

Applications

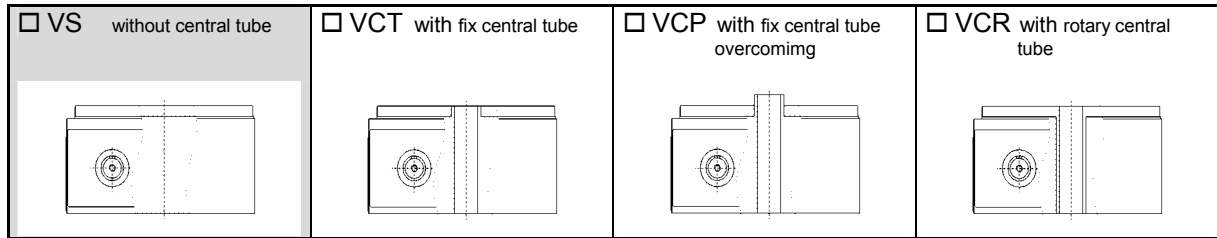
The Guardian Series, with an internal torque-limiting clutch, is ideal for conveyor applications requiring indexing motion as well as for linear motions using crank or oscillating arm attachments.

<p>Plate Cams</p> <p>Popular, economical design used in low speed applications.</p>	
<p>Globoidal Cams</p> <p>Complex, tapered rib globoidal cams, commonly known as roller gear cams, are the heart of IMC's indexers. Controlled follower preloads increase follower life, speeds and accuracy for the ultimate solution in motion control.</p>	
<p>Face-Grooved Cams</p> <p>Medium speed cams utilizing a groove slightly larger than the follower diameter providing minimal running clearance and reduced backlash.</p>	
<p>Conjugate Cams</p> <p>Dual cams controlling preloaded followers which provide higher speed capabilities and better accuracy.</p>	
<p>Barrel Cams</p> <p>Cylindrical cams which can be provided as an end cam, grooved type with minimal follower clearance or as a ribbed type utilizing preloaded followers for increased life and accuracy.</p>	

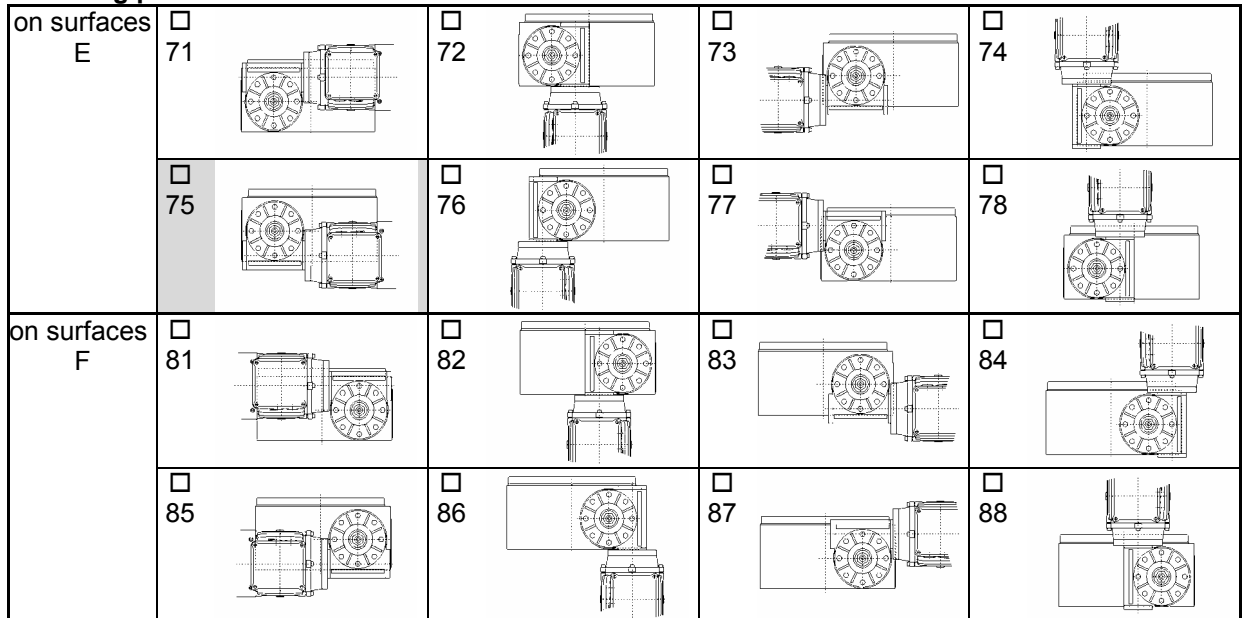
Versions



Central tube models



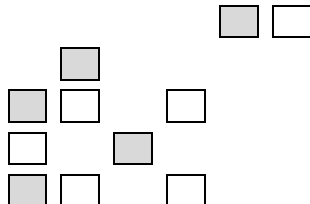
Mounting position of reducer



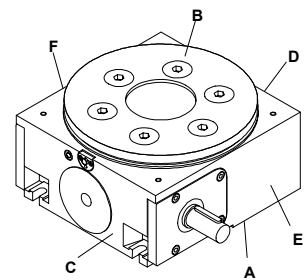
Surfaces

- 1 surfaces with input shaft
- 2 surfaces with output shaft
- 3 surfaces with fastening bores
- 4 surfaces with oil bores
- 5 lower surface after installation

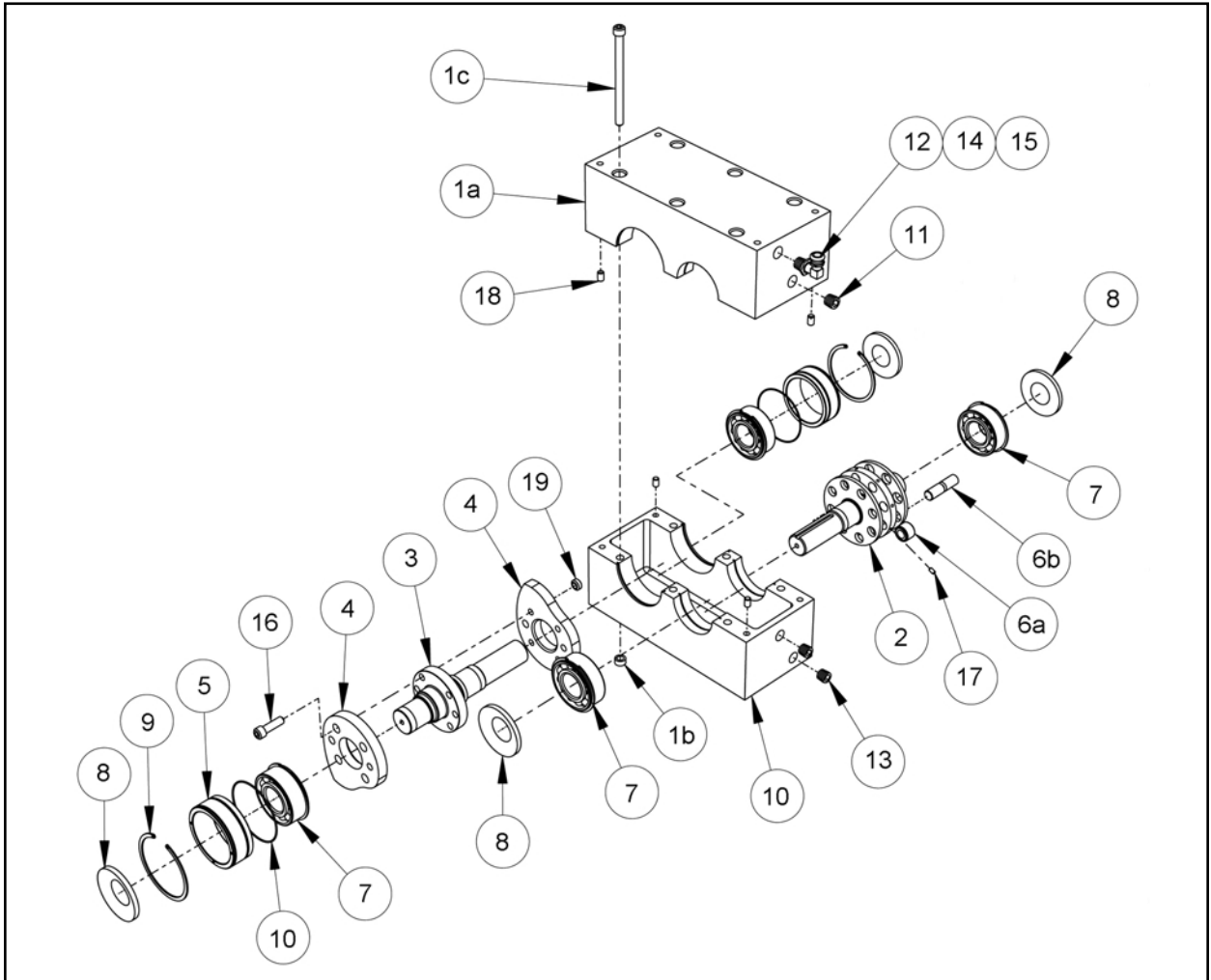
A B C D E F Preference



- E
- B
- A
- C
- A



The sketches contained in this document are for illustrative purposes only. They are intended to represent the component but may not be shown to scale. The various models may be different than shown, depending upon options chosen or the particular configuration of a unit.



ParaDex Parts List

- | | | |
|--|--------------------------------|------------------------------------|
| 1. Housing | 6a. Cam Follower Bearing | 13. Pipe Plug (2) |
| 1a. Housing Halves | 6b. Cam Follower Stud | 14. Adapter |
| 1b. Threaded Inserts – Nutsert | 7. Double Row Ball Bearing (4) | 15. 90° Street Ell |
| 1c. Socket Head Cap Screw
(5" Long) | 8. Shaft Seals (4) | 16. Socket Head Cap Screw
(Cam) |
| 2. Output Shaft | 9. Snap Ring (2) | 17. Set Screw |
| 3. Cam Shaft | 10. "O" Ring (2) | 18. Dowel Pin |
| 4. Cams | 11. Oil Gage | 19. Threaded Insert - Nutsert |
| 5. Eccentric Bushings (2) | 12. Vent | |

1.6.2 Lubricating Facilities and Installation Positions, Series 40P- 130P

Bottom face D or F

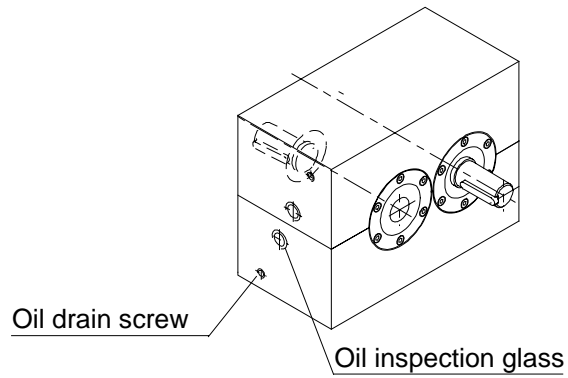


Fig. 7

Bottom face C or E

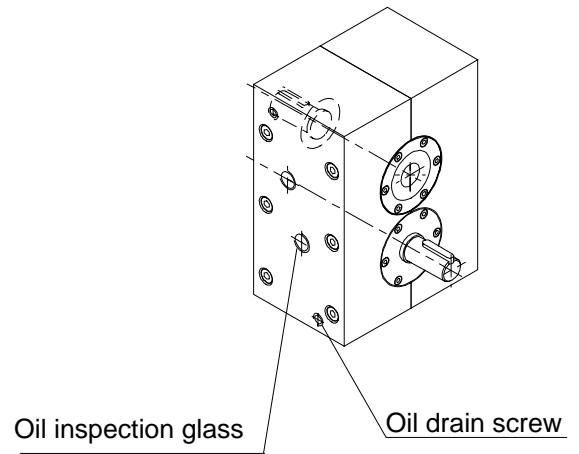


Fig. 8

Bottom face A or B

Face with oil holes corresponding to order

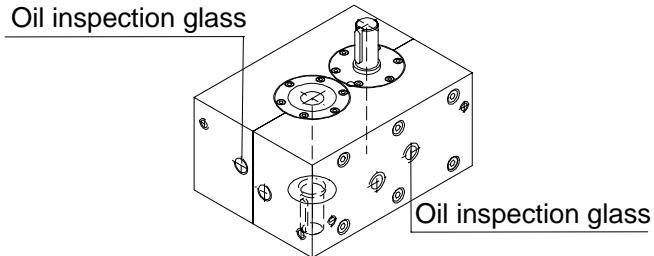


Fig. 9

Permanent lubrication

Installation position arbitrary

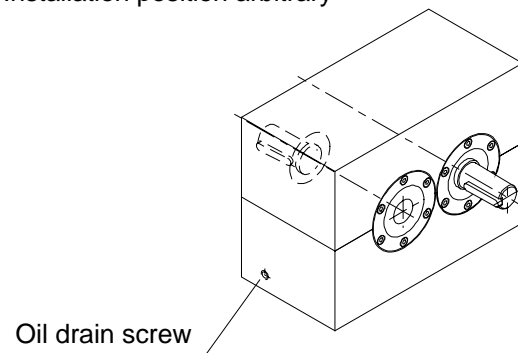
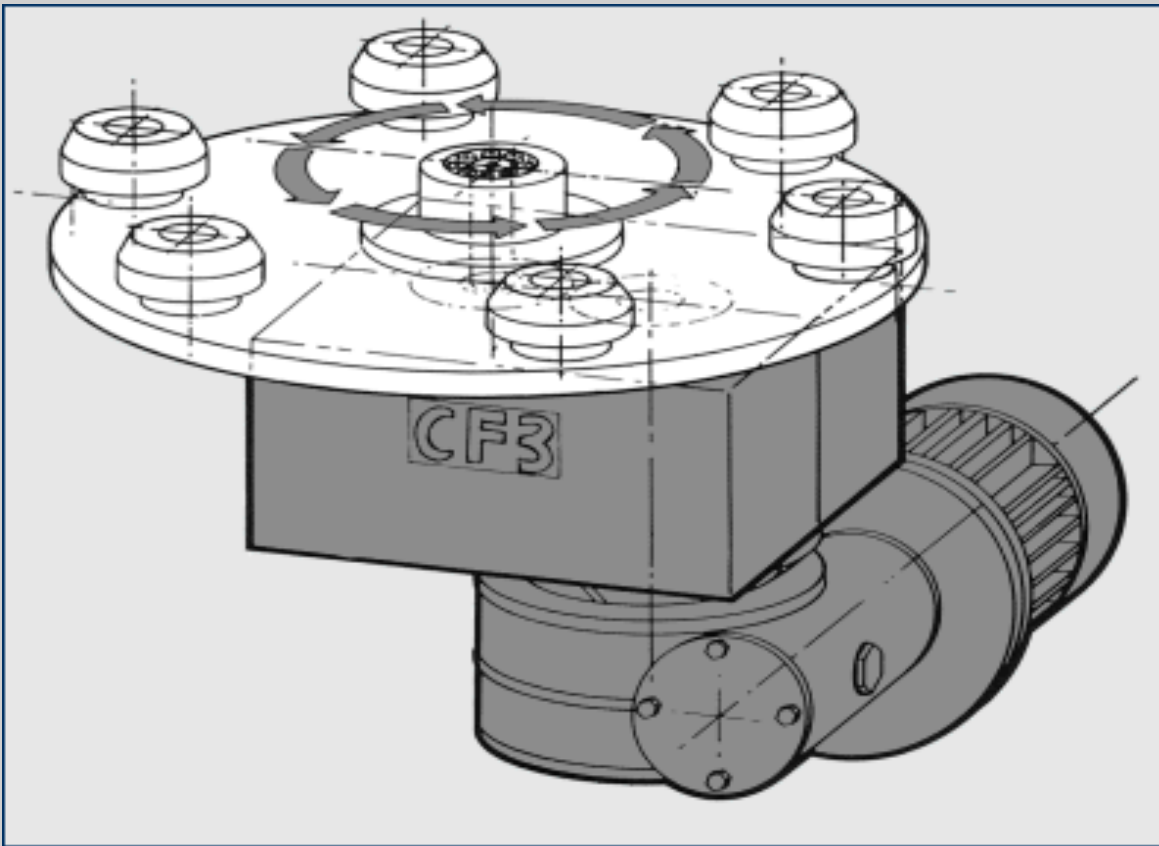


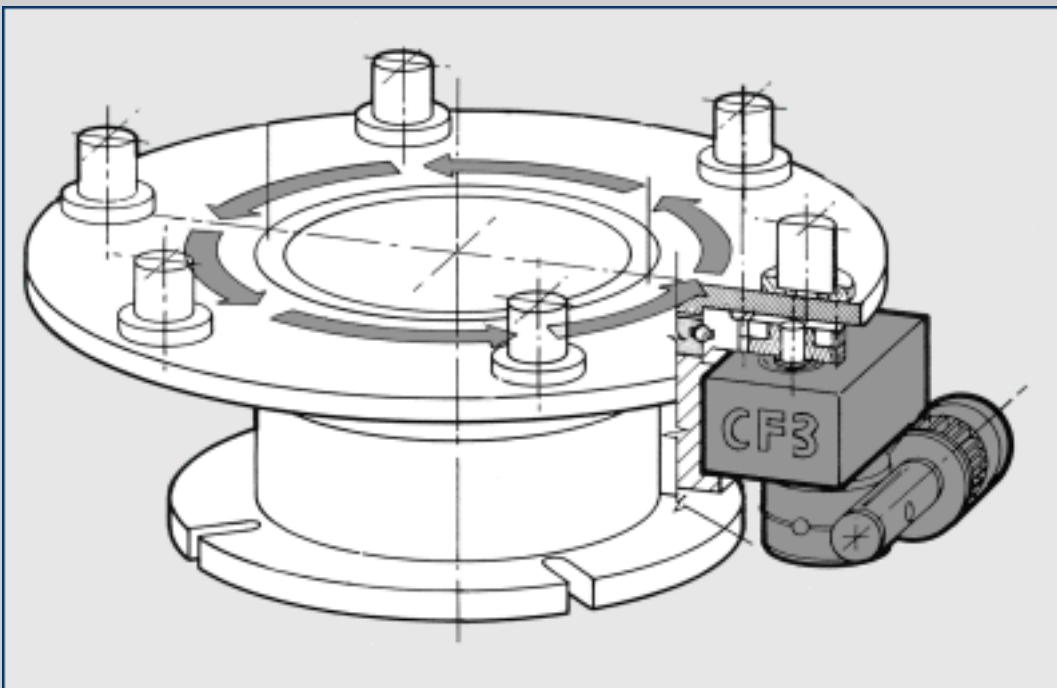
Fig. 10

CF3 index drives Application examples



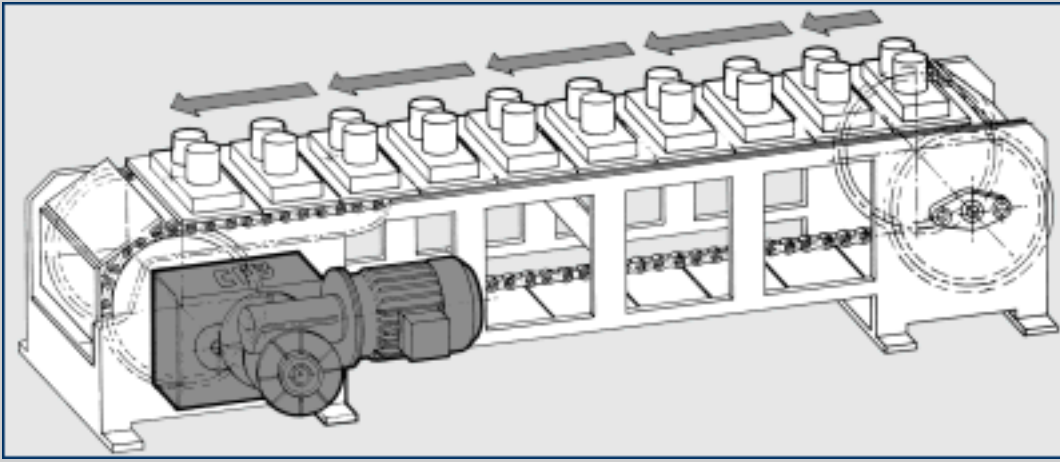
drive of indexing table

CF3 index drive as drive of an indexing table, which is directly connected with the indexer.

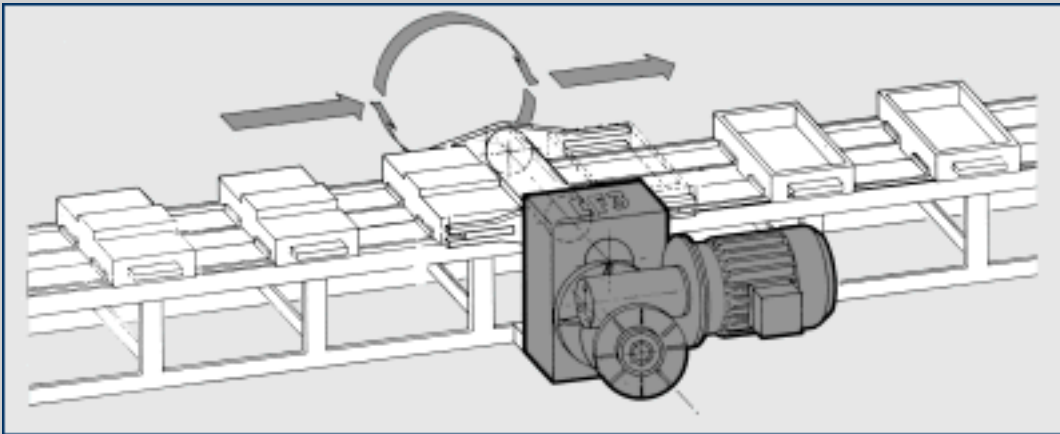


drive of indexing table

CF3 index drive as drive of an indexing table, which is driven by a gear transmission that is connected in series with the indexer.



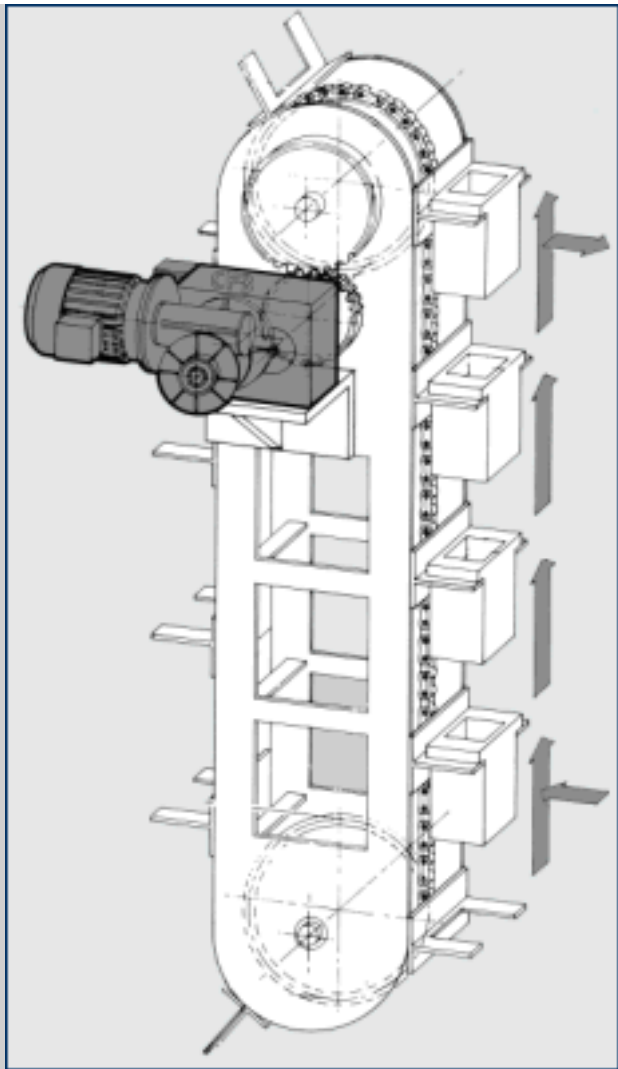
drive of plate conveyor
CF3 index drive as drive
of a steel plate conveyor.

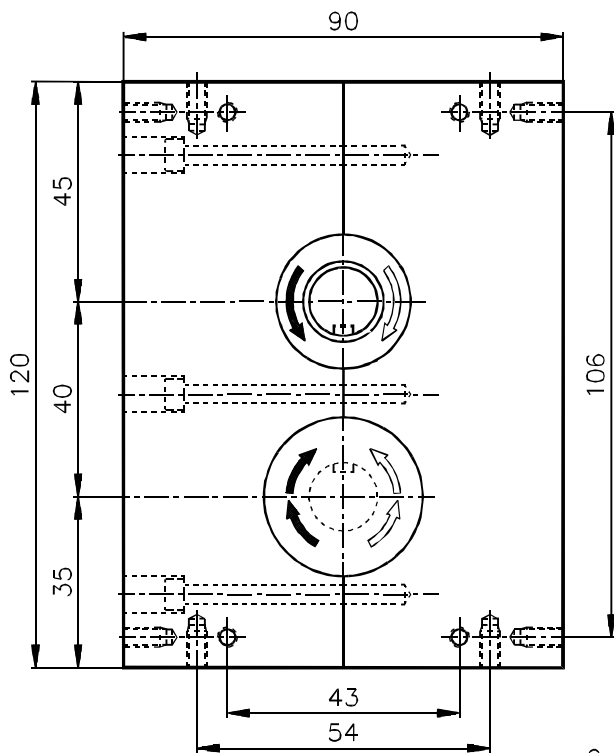


turning station
CF3 index drive as drive
for a turning station.

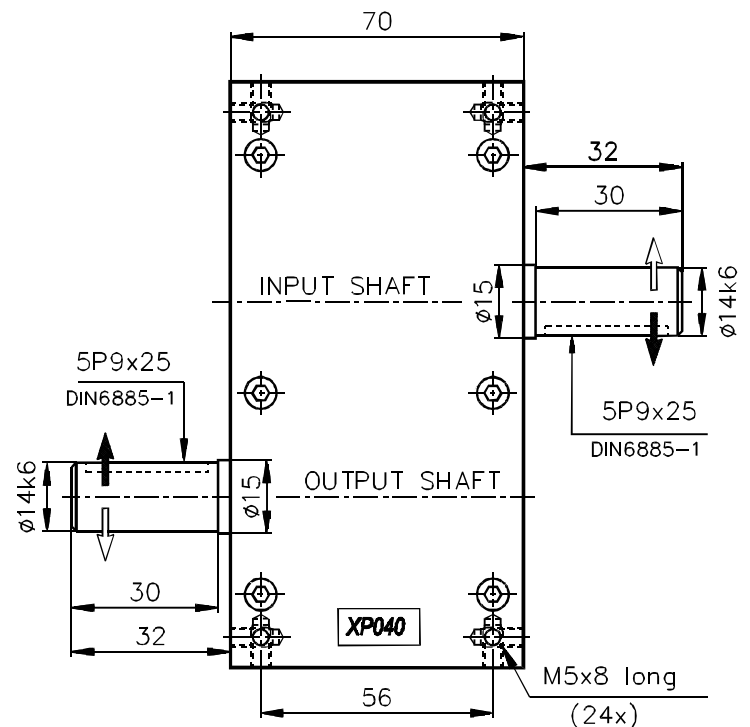
Elevator

CF3 index drive as drive for an elevator.





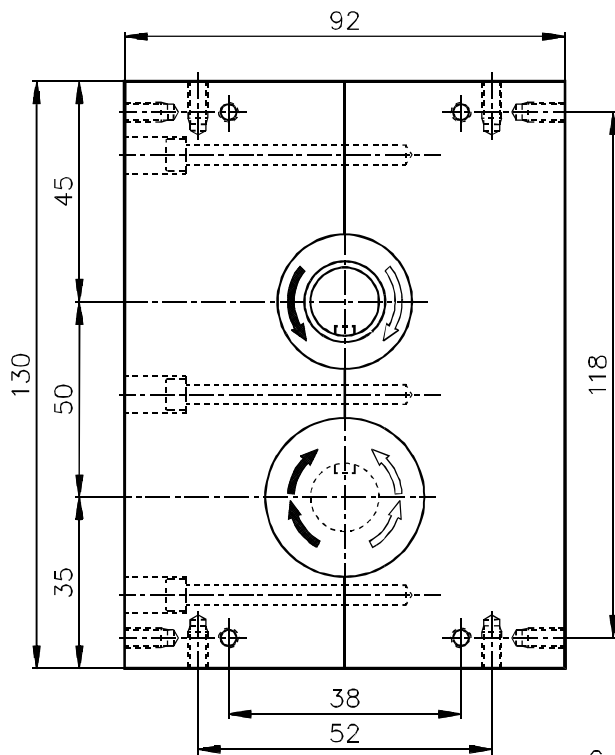
Center in
shafts M5x12



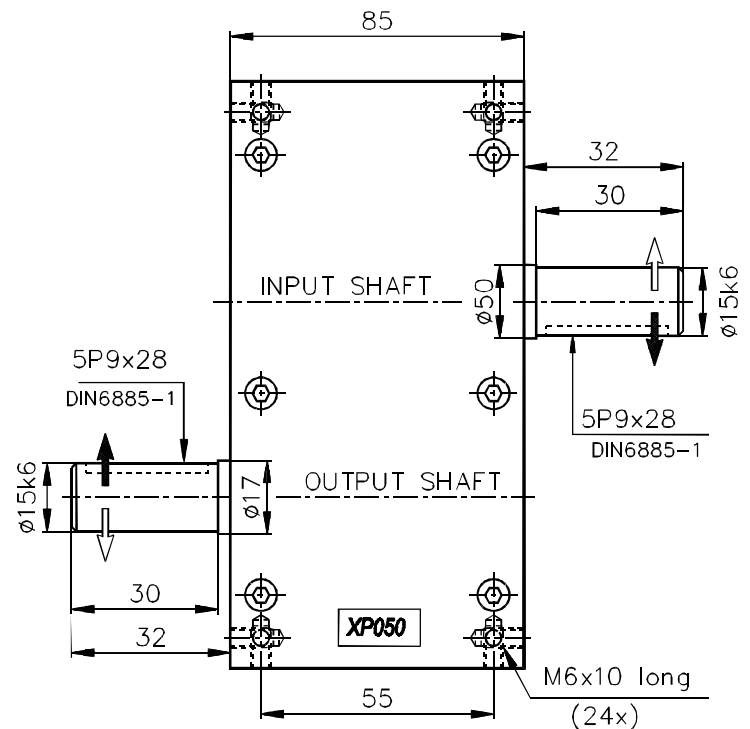
General tolerances
as per ISO 2768-m

Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	19	16	14	14
	330	mS 30	19	16	13	14
2	150	mS 50	22	18	15	14
	180-210	mS 30	22	18	15	14
	240-300	mS 0	20	16	14	14
3	120	mS 30	26	25	21	14
	150	mS 0	26	24	20	14
	180-300	mS 0	24	20	16	14
4	90	mS 0	22	22	20	14
	120-180	mS 0	21	20	17	14
	210-300	mS 0	20	19	16	14
5	120-180	mS 0	25	25	23	18
	210-300	mS 0	24	24	20	18
6*	150	mS 0	25	25	23	14
	180	mS 0	25	25	22	14
	210-300	mS 0	24	23	19	14
8*	120	mS 0	21	21	21	14
	150-180	mS 0	20	20	20	14
	210-300	mS 0	20	20	18	14
10*	150-300	mS 0	25	25	24	18
	210-300	mS 0	23	23	23	18

- Standard followers - $\varnothing 12$ mm.
- Housing made out of aluminium, weight approx. 2 kg.
- Internal moment of inertia $0,0001 \text{ kgm}^2$.
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6, 8 or 10 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
- All rights reserved for technical changes.



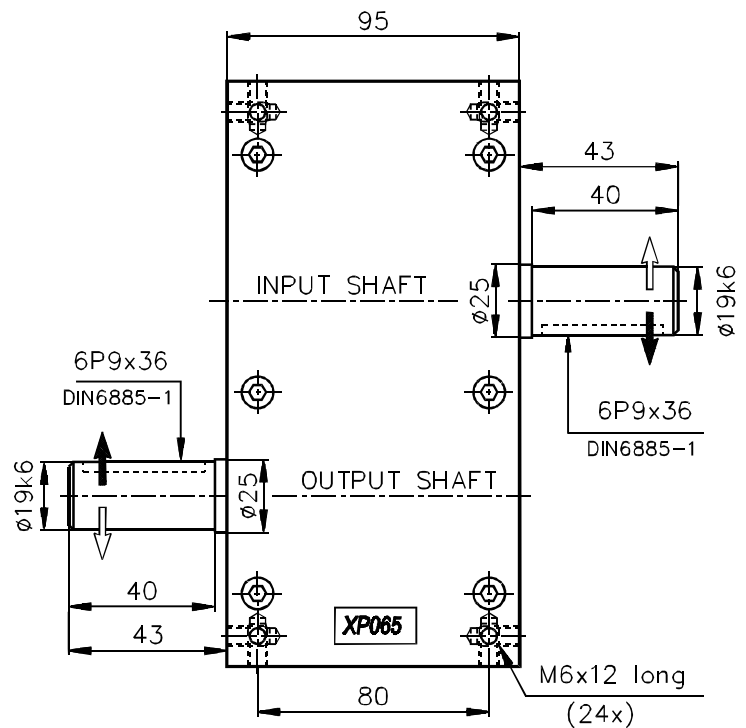
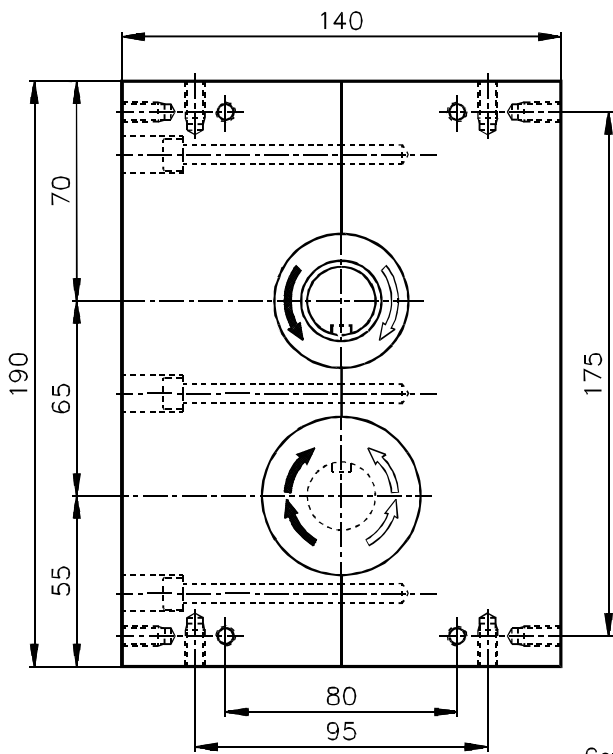
Center in
shafts M5x12



General tolerances
as per ISO 2768-m

Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	37	30	24	18
	330	mS 30	37	30	24	18
2	160	mS 50	38	35	28	18
	180-210	mS 30	38	33	26	18
	240-300	mS 0	46	37	30	20
3	120	mS 30	45	45	39	18
	150	mS 0	53	53	45	20
	180-300	mS 0	50	45	37	20
4	105	mS 0	39	39	38	18
	120-180	mS 0	43	43	39	20
	210-300	mS 0	41	41	34	20
5	120-180	mS 0	42	42	41	22
	210-300	mS 0	40	40	36	22
6*	180	mS 0	51	51	51	20
	210-300	mS 0	49	49	44	20
8*	150-180	mS 0	42	42	42	20
	210-300	mS 0	40	40	40	20
10*	150-180	mS 0	40	40	40	22
	210-300	mS 0	39	39	39	22

- Standard followers - Ø 16 mm.
- Housing made out of aluminium, weight approx. 3 kg.
- Internal moment of inertia 0,0006 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6, 8 or 10 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
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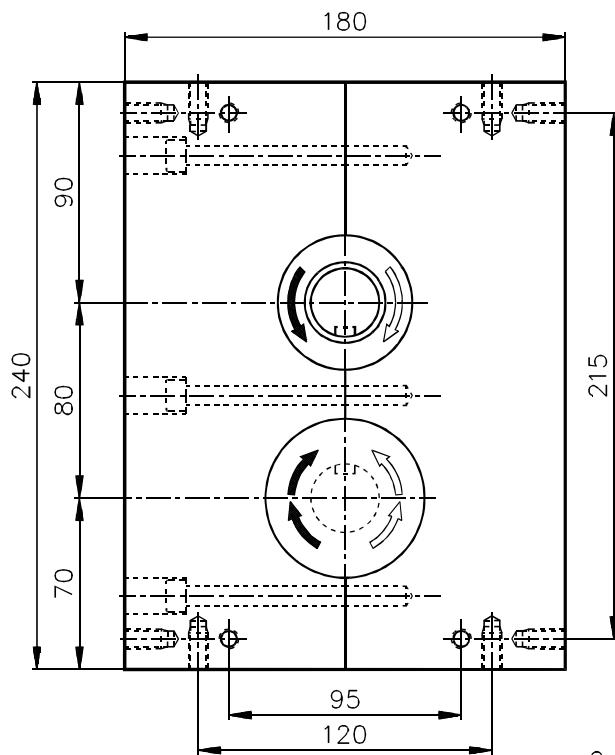


Center in shafts M6x16

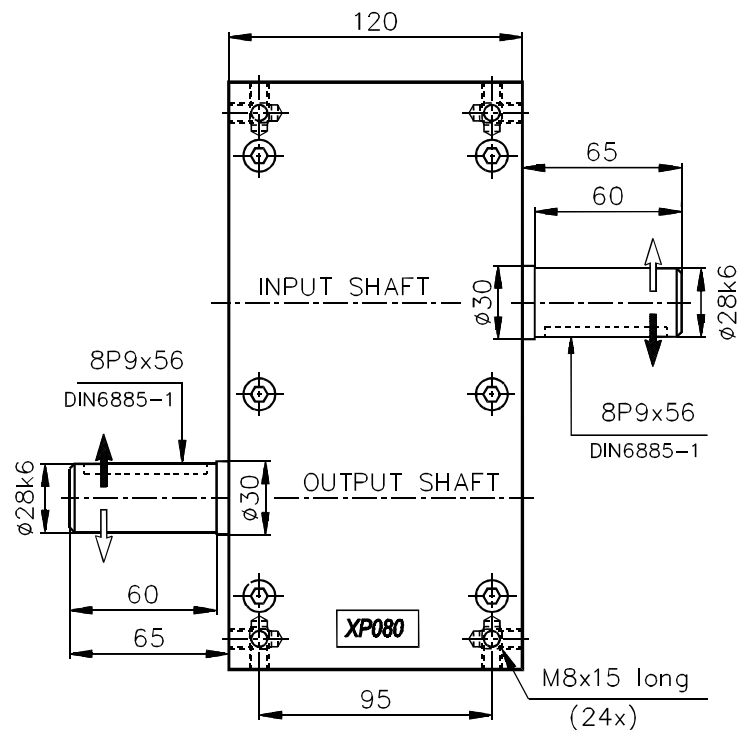
General tolerances as per ISO 2768-m

Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	48	39	31	25
	330	mS 30	42	34	27	23
2	150	mS 50	49	41	32	23
	180-210	mS 30	54	44	35	25
	240-300	mS 0	51	41	33	25
3	120	mS 30	57	55	44	23
	150	mS 0	66	62	50	25
	180-300	mS 0	62	50	41	25
4	90	mS 0	51	50	45	23
	120-180	mS 0	52	52	43	25
	210-300	mS 0	50	45	37	25
5	120-180	mS 0	55	55	51	29
	210-300	mS 0	53	53	43	29
6*	150	mS 0	57	57	53	23
	180	mS 0	63	63	57	25
	210-300	mS 0	61	61	49	25
8*	120	mS 0	47	47	47	23
	150-180	mS 0	51	51	51	25
	210-300	mS 0	49	49	44	25
10*	150-180	mS 0	54	54	54	29
	210-300	mS 0	51	51	51	29

- Standard followers - Ø 16 mm.
- Housing made out of aluminium, weight approx. 8 kg.
- Internal moment of inertia 0,0007 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6, 8 or 10 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
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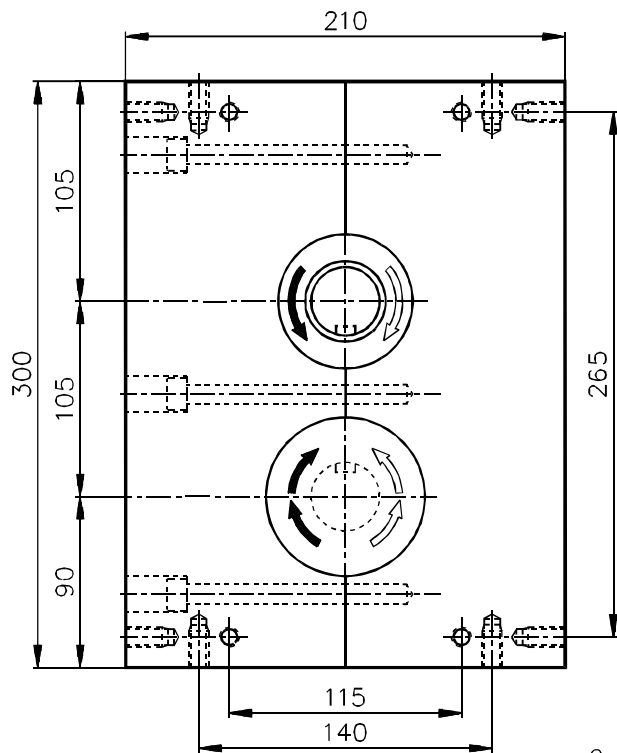
Center in
shafts M10x22



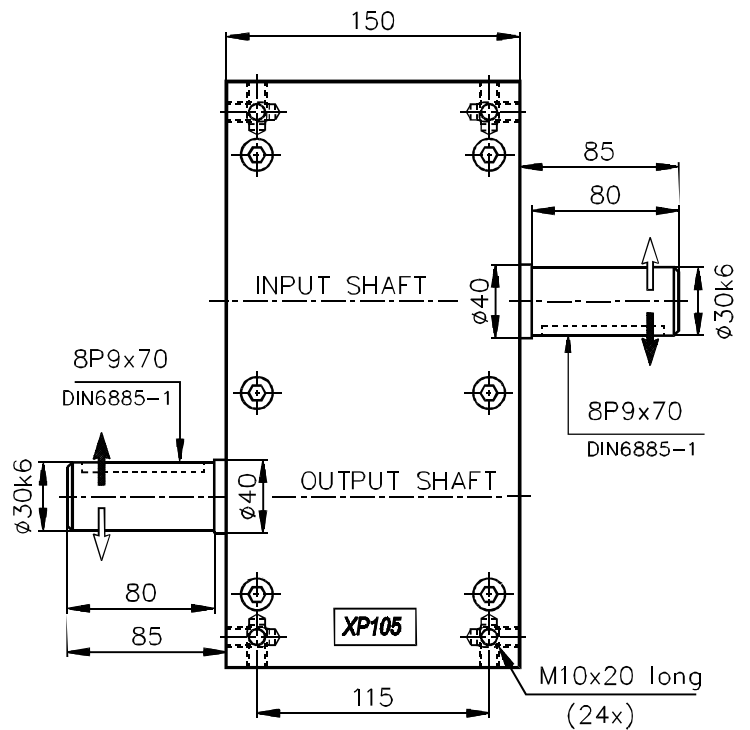
General tolerances
as per ISO 2768-m

Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	115	93	74	30
	330	mS 30	115	93	75	30
2	150	mS 50	116	93	73	27
	180-210	mS 30	129	104	84	30
	240-300	mS 0	121	99	80	30
3	120	mS 30	144	128	102	27
	150	mS 0	171	148	119	30
	180-300	mS 0	149	121	98	30
4	90	mS 0	126	125	103	27
	120-180	mS 0	135	126	102	30
	210-300	mS 0	130	109	88	30
5	120-180	mS 0	152	152	129	36
	210-300	mS 0	145	136	111	36
6*	150	mS 0	144	144	123	27
	180	mS 0	164	164	137	30
	210-300	mS 0	158	158	106	30
8*	120	mS 0	117	117	115	27
	150-180	mS 0	132	132	123	30
	210-300	mS 0	127	127	106	30
10*	150-180	mS 0	147	147	147	36
	210-300	mS 0	141	141	132	36

- Standard followers - \varnothing 25 mm.
- Housing made out of aluminium, weight approx. 16 kg.
- Internal moment of inertia 0,003 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6, 8 or 10 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
- All rights reserved for technical changes.



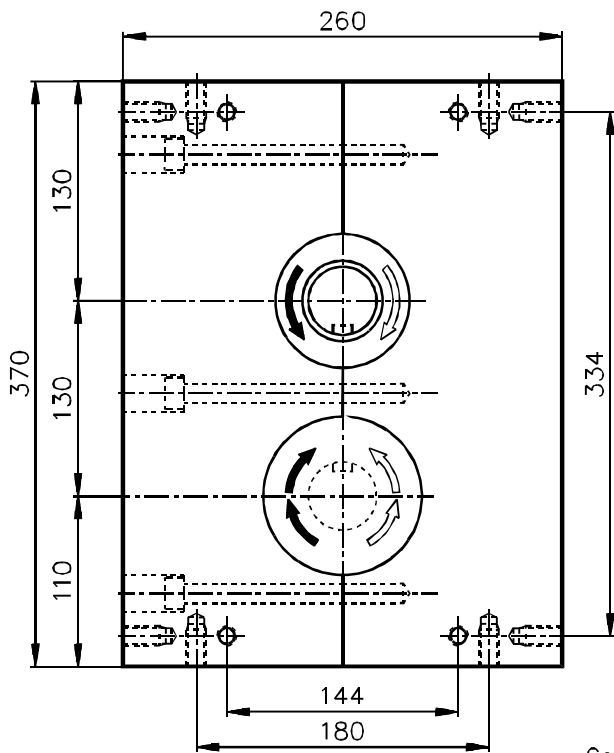
Center in shafts M10x22



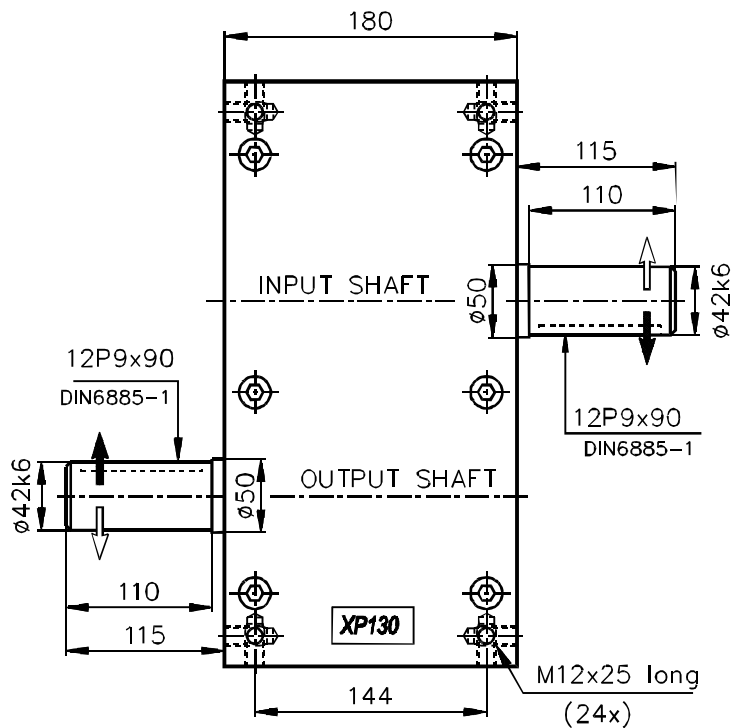
General tolerances as per ISO 2768-m

Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	264	213	168	40
	330	mS 30	216	175	138	35
2	150	mS 50	254	204	155	35
	180-210	mS 30	297	240	191	40
	240-300	mS 0	280	227	183	40
3	120	mS 30	335	281	219	35
	150	mS 0	412	339	271	40
	180-300	mS 0	343	278	225	40
4	90	mS 0	292	284	221	35
	120-180	mS 0	328	291	234	40
	210-300	mS 0	309	251	203	40
5	120-180	mS 0	355	354	285	47
	210-300	mS 0	339	303	245	47
6*	150	mS 0	335	334	269	35
	180	mS 0	397	389	314	40
	210-300	mS 0	381	335	271	40
8*	120	mS 0	272	271	252	35
	150-180	mS 0	319	319	282	40
	210-300	mS 0	306	300	243	40
10*	150-300	mS 0	345	345	344	47
	210-300	mS 0	329	329	294	47

- Standard followers - \varnothing 35 mm.
- Housing made out of aluminium, weight approx. 32 kg.
- Internal moment of inertia 0,007 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6, 8 or 10 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
- All rights reserved for technical changes.



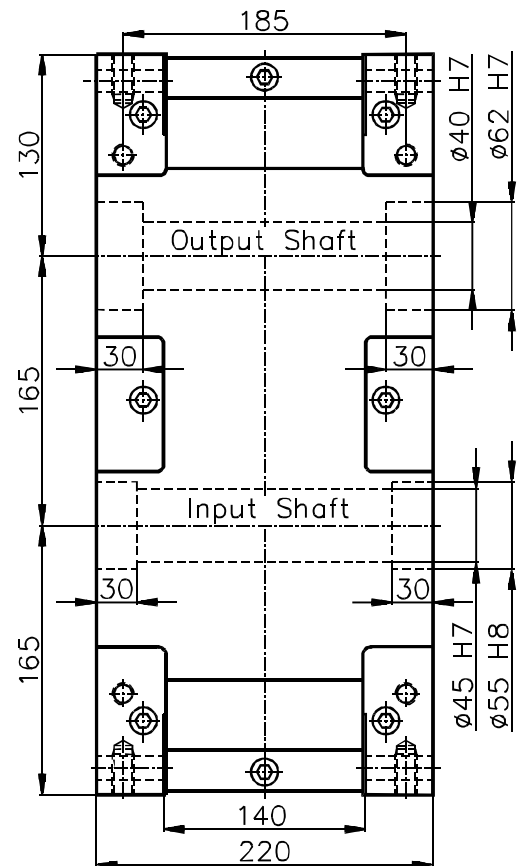
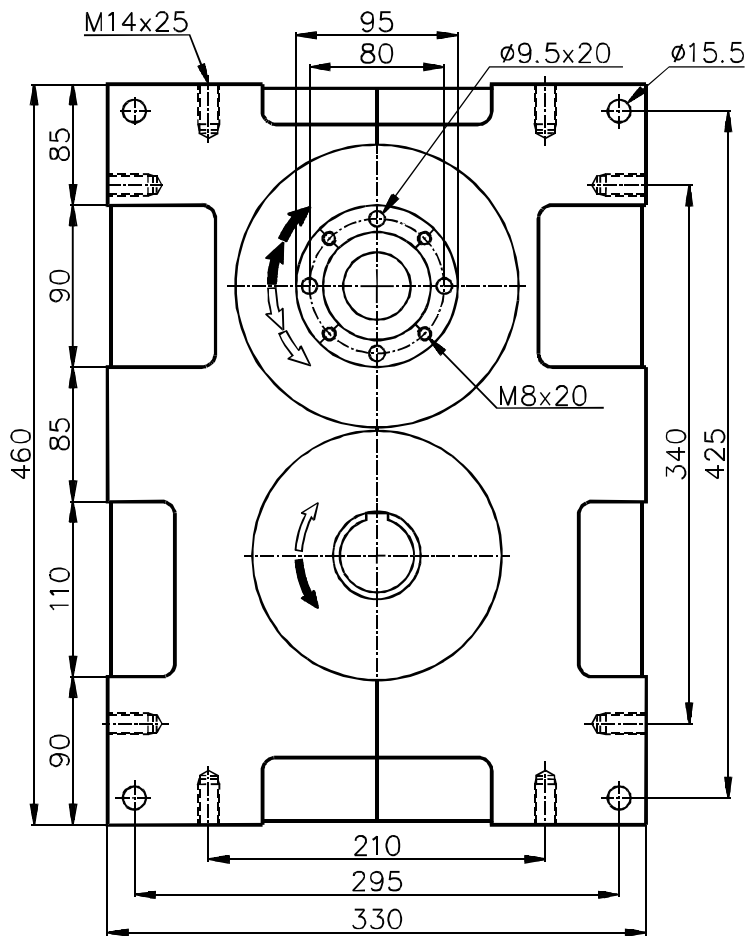
Center in shafts M16x32



General tolerances as per ISO 2768-m

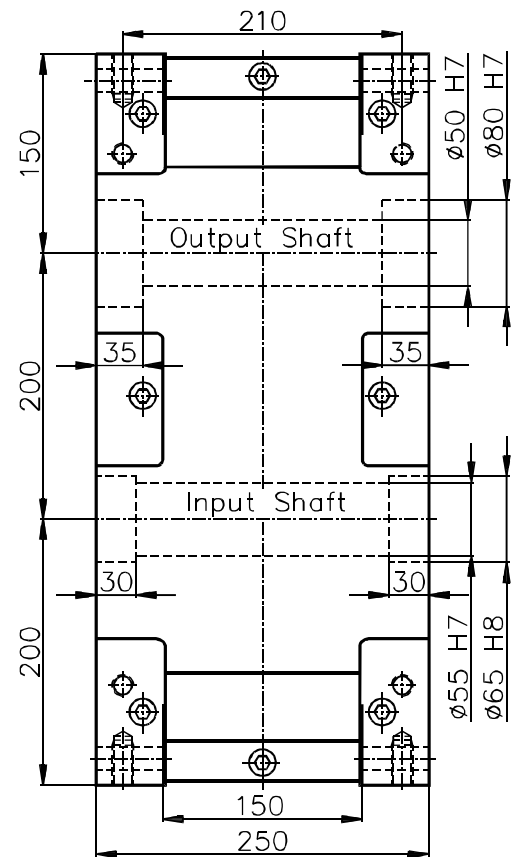
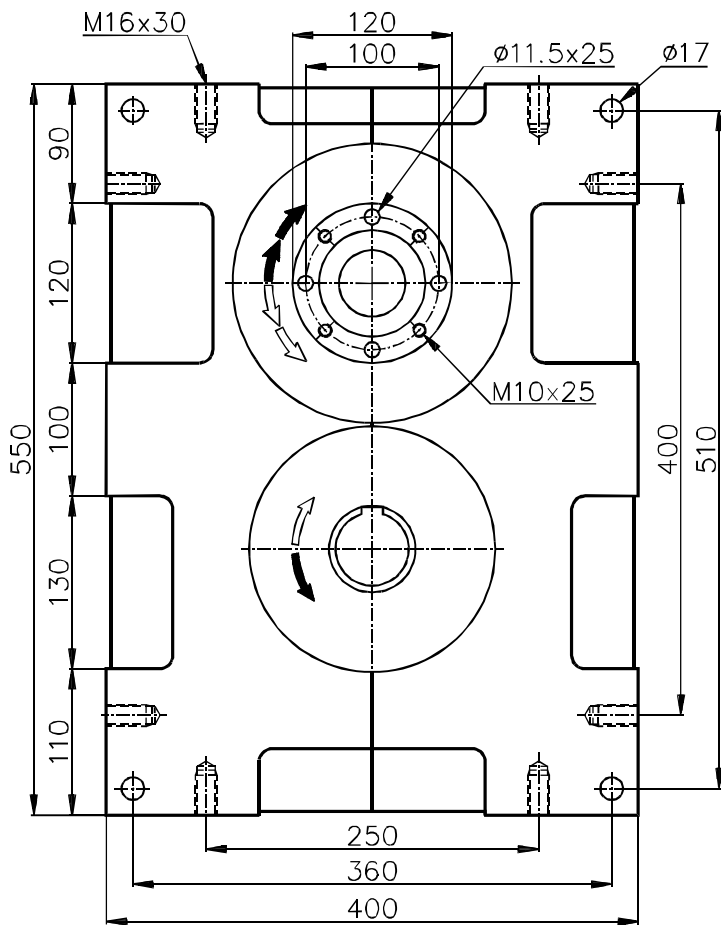
Standard Indexer						
Number of stops n	Index angle α [°] from – to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	407	328	253	50
	330	mS 30	359	290	227	46
2	150	mS 50	428	341	251	46
	180-210	mS 30	459	370	290	50
	240-300	mS 0	432	350	280	50
3	120	mS 30	544	466	357	46
	150	mS 0	624	522	412	50
	180-300	mS 0	529	429	345	50
4	90	mS 0	479	473	363	46
	120-180	mS 0	497	449	359	50
	210-300	mS 0	477	387	312	50
5	120-180	mS 0	543	542	443	59
	210-300	mS 0	519	473	382	59
6*	150	mS 0	545	543	446	46
	180	mS 0	601	600	483	50
	210-300	mS 0	576	517	418	50
8*	120	mS 0	446	444	421	46
	150-180	mS 0	484	483	435	50
	210-300	mS 0	464	463	375	50
10*	150-180	mS 0	528	528	525	59
	210-300	mS 0	504	504	458	59

- Standard followers - \varnothing 40 mm.
- Housing made out of aluminium, weight approx. 45 kg.
- Internal moment of inertia 0,03 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6, 8 or 10 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
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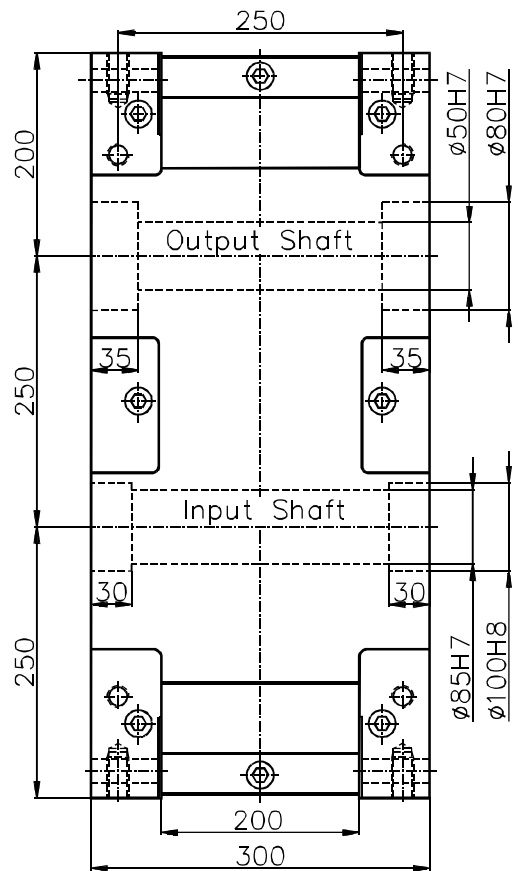
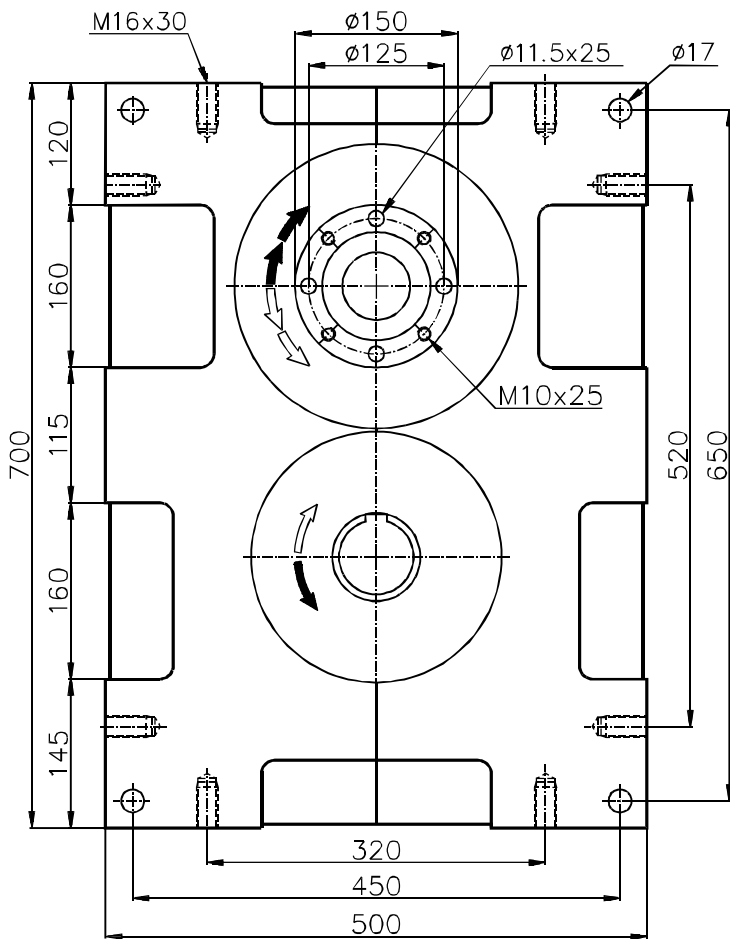
Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	766	612	455	62
	330	mS 30	770	618	474	62
2	165	mS 50	893	708	506	62
	180-210	mS 30	859	689	526	62
	240-300	mS 0	812	656	518	62
3	135-150	mS 30	1059	942	720	62
	180-210	mS 0	1065	892	705	62
	240-300	mS 0	997	807	646	62
4	105	mS 30	887	870	688	62
	120-180	mS 0	873	841	663	62
	210-300	mS 0	840	726	583	62
5	120-180	mS 0	969	965	835	74
	210-300	mS 0	927	902	726	74
6*	180-210	mS 0	1045	1043	869	62
	240-300	mS 0	1017	973	786	62
8*	150-210	mS 0	840	838	779	62
	240-300	mS 0	817	816	703	62

- Standard followers - \varnothing 52 mm.
- Housing made of cast iron, weight approx. 120 kg.
- Internal moment of inertia 0,07 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6 or 8 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
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Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	1245	987	706	76
	330	mS 30	1250	1000	748	76
2	165	mS 50	1454	1141	768	76
	180-210	mS 30	1400	1117	829	76
	240-300	mS 0	1322	1066	832	76
3	135-150	mS 30	1850	1524	1134	76
	180-210	mS 0	1796	1447	1131	76
	240-300	mS 0	1621	1311	1043	76
4	105	mS 30	1550	1504	1064	76
	120-180	mS 0	1528	1366	1064	76
	210-300	mS 0	1460	1182	943	76
5	120-180	mS 0	1676	1665	1322	90
	210-300	mS 0	1603	1450	1160	90
6*	180-210	mS 0	1827	1758	1405	76
	240-300	mS 0	1777	1583	1275	76
8*	150-210	mS 0	1470	1466	1263	76
	240-300	mS 0	1429	1418	1143	76

- Standard followers - \varnothing 62 mm.
- Housing made of cast iron, weight approx. 220 kg.
- Internal moment of inertia 0,15 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6 or 8 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
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Standard Indexer						
Number of stops n	Index angle α [°] from - to	Law of motion	Output torque at indexes/min [Nm]			Followers at pitch radius [mm]
			50	100	200	
1	300	mS 50	2237	1745	1129	96
	330	mS 50	2172	1704	1146	96
2	165	mS 50	2616	2005	1151	96
	180-210	mS 30	2524	1991	1381	96
	240-300	mS 0	2387	1914	1455	96
3	135-150	mS 30	3383	2711	1893	96
	180-210	mS 0	3236	2595	1972	96
	240-300	mS 0	2922	2357	1848	96
4	105	mS 30	2834	2662	1689	96
	120-180	mS 0	2802	2453	1854	96
	210-300	mS 0	2638	2130	1680	96
5	120-180	mS 0	3002	2960	2281	112
	210-300	mS 0	2873	2549	2026	112
6*	180-210	mS 0	3349	3164	2502	96
	240-300	mS 0	3257	2852	2283	96
8*	150-210	mS 0	2698	2686	2259	96
	240-300	mS 0	2791	2785	2460	96

- Standard followers - \varnothing 80 mm.
- Housing made of cast iron, weight approx. 320 kg.
- Internal moment of inertia 0,5 kgm².
- Torque during dwell approx. 20 % higher than permissible torque at 50 indexes/min.
- Keyways on input and output shafts positioned in the middle of a dwell.
- Keyways to DIN 6885/1.
- Reversibility of rotation possible.
- Long life lubrication.
- * Indexer with 6 or 8 stops requires 2 revolutions per input shaft rotation.
- Drawings with detailed dimensions available on CAD (DXF, DWG).
- A full range of reducer, clutch and brake options, as well as output overloads, is available.
- A wide range of further number of stops, index angles, and motion laws including oscillating movements is available.
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