



**库威得**  
KUDOSWORLD



# **HYDRODYNAMIC COUPLING**

**TK-N**

**KWN 29000**



**Product | Engineering Services  
Maintenance**

## Technical Features

Hydrodynamic couplings belong to the group of hydrodynamic power transmission devices.

The power transmission is done by mass forces of the operation liquid according to the "Frottinger Prinzip". The impeller pump absorbs the mechanical power of the drive and increases the energy of the circulating operating liquid. The turbine wheel takes energy away from the operating liquid and outputs mechanical power. There is not any fixed connection between both wheels. Slight power losses, caused by the for the power transmission necessary slippage, will be transformed to heat.

The permissible ambient temperature range of the hydrodynamic coupling in standard design is between  $-25^{\circ}\text{C}$  ~  $+40^{\circ}\text{C}$  (other values on request).

## Hydrodynamic Couplings Are Distinguished by

1. Power transmission free of wear.
2. Steady shock free start up in loaded or unloaded state.
3. Slight backlash on the electrical power supply due to fast abating of the start up current and low start up current.
4. Load compensation on multi motor drives.
5. Efficient decoupling of vibration systems.
6. Damping of shocks, vibration and load changes.
7. Protection against thermal overload by the installed fusible plug or by a mechanical or electronical switch off device.

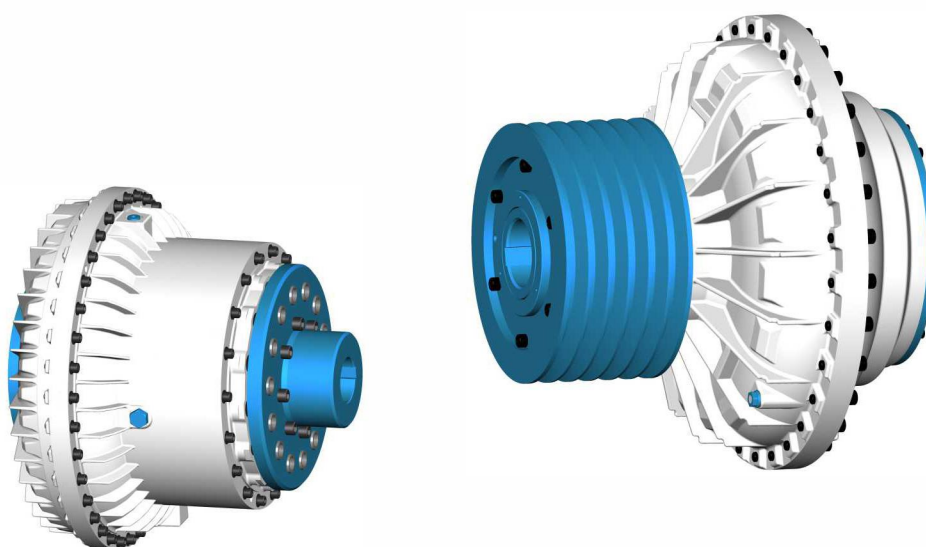
## Specification

1. With elastic coupling.
2. With elastic coupling and brake wheel.
3. With elastic coupling and brake disc.
4. With enlarged delay chamber.
5. Radial removable, motor or driven device displacement is not required to move.
6. hydrodynamic coupling with two hydrodynamic units for high power.
7. With v-belt pulley.
8. Diesel driven driving device.
9. Vertical mounted drive device.
10. Water medium hydraulic coupling.

## Typical Applications

1. Accelerating of large masses for example at mills, centrifuges, mixer, blower, wood working machines, sieves, ball mills, rope machinery and tool machinery.
2. Start up against high break off torques for example mixer, conveyors, breakers, centrifuges and pumps.
3. Soft start up at tip and adjustment operation on large mobile equipment.
4. Safe overload protection for example at dredgers, breakers and scoop wheels.

## Types



- Type HR  
hydrodynamic coupling without delay chamber
- Type HR-C  
hydrodynamic coupling with delay chamber
- Type HR-CC  
hydrodynamic coupling with enlarged delay chamber
- Type HR-D  
hydrodynamic coupling with two hydrodynamic units
- Type HR-B, HR-CB, HR-CCB, HR-DB  
hydrodynamic couplings of the type HR, HR-C, HR-CC, HR-D with brake drum according to DIN 15431
- Type HR-S, HR-CS, HR-CCS, HR-DS  
hydrodynamic couplings of the type HR. HR-C, HR-CC, HR-D with brake disk according to DIN 15432
- Type HR-P, HR-CP, HR-CCP  
hydrodynamic couplings of the type HR, HR-C, HR-CC with pulley





## Installation and Operating Conditions

### 1. Selection of the coupling

The first coupling selection can be done according to the power characteristics given on page 4.  
In case of the wish of a selection done by the manufacturer please use the questionnaire.

### 2. Possible installation placements

Hydrodynamic couplings can operate in both rotation directions and can be installed like follow described:

mounting on the motor shaft/ gearbox shaft

The drive takes place on the outer wheel, which following Advantages:

- The power transmission of the hydrodynamic coupling increased due to the fact optimized circuit
- The hydrodynamic coupling can be thermally stability operate
- The installed temperature monitoring system delivers always clear signals.

### 3. Special designs for vertical installation of the hydrodynamic coupling are available.

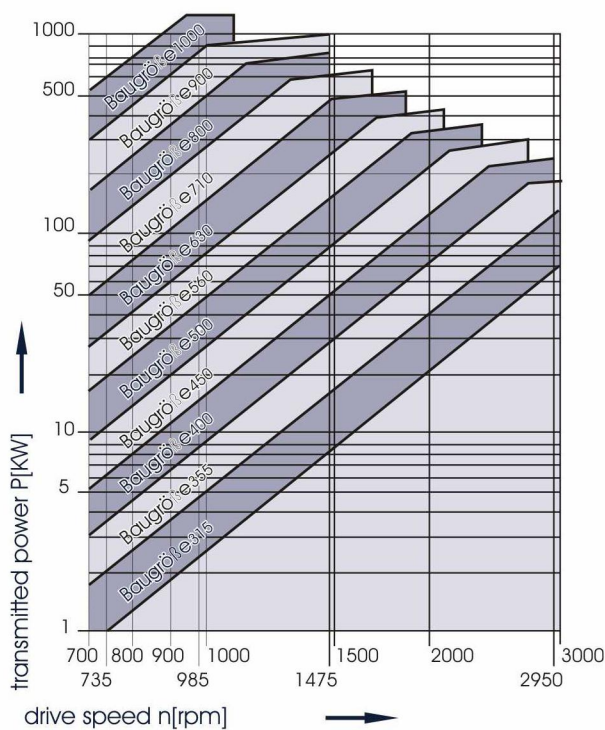
### 4. Notice

The assembly of the hydraulic coupling shall be in accordance with the steps in the installation and maintenance manual. Poor assembly results in a significant impact on the position of the elastic couplings (model HR, HR-B and HR-S) during the service life and a reactive force on these types of elastic couplings.

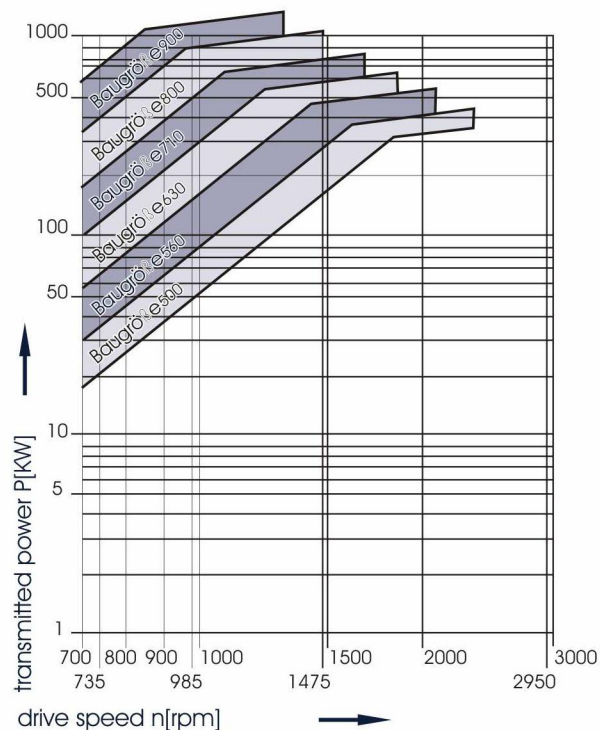


## Power Characteristics

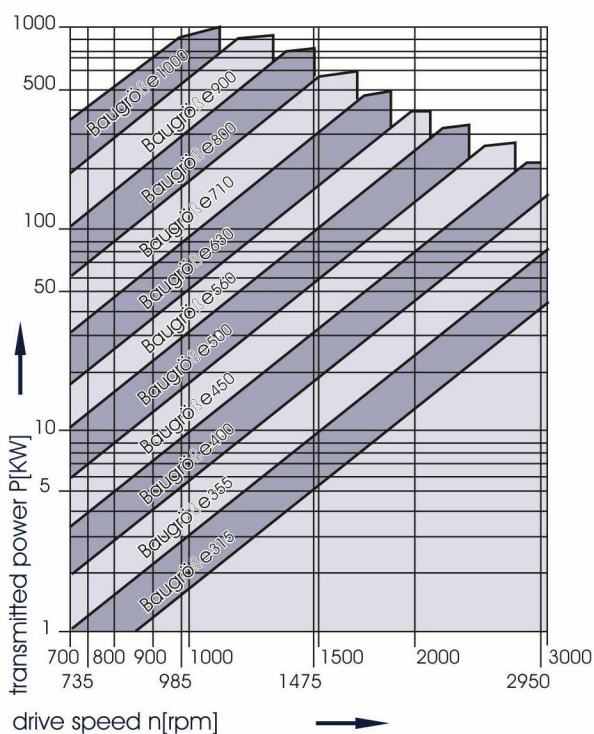
Power characteristics for one hydrodynamic unit(outer drive)



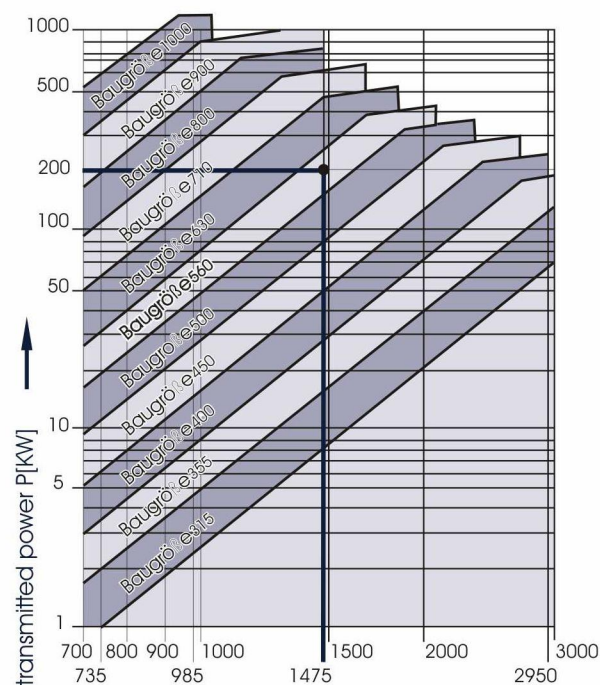
Power characteristics for two hydrodynamic units (outer drive)



Power characteristics for one hydrodynamic unit( internal drive)



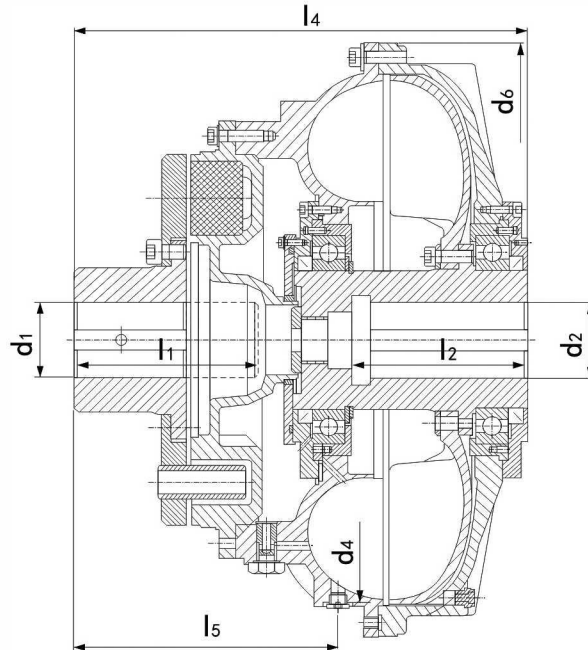
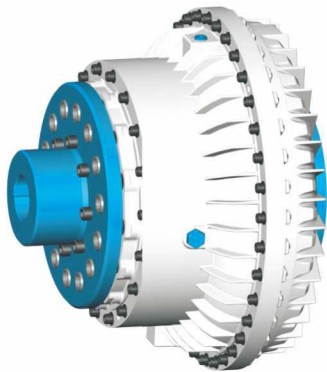
Example for selection (for size 560)



hydrodynamic coupling for an outer drive standard design (one hydrodynamic unit )  
drive speed  $n=1475\text{rpm}$   
transmitted power  $P_{\text{nominal}}=200\text{KW}$

## Type HR-C

- hydrodynamic coupling with delay chamber



### Ordering example: HR-C 560-65 H7-70 H7 x 140

Designation of a hydrodynamic coupling type HR-C, nominal size 560, bore of the flexible connection coupling  $d_1=65$  H7, bore of the hydrodynamic coupling  $d_2=70$  H7, for shaft length  $l_2=140$  mm

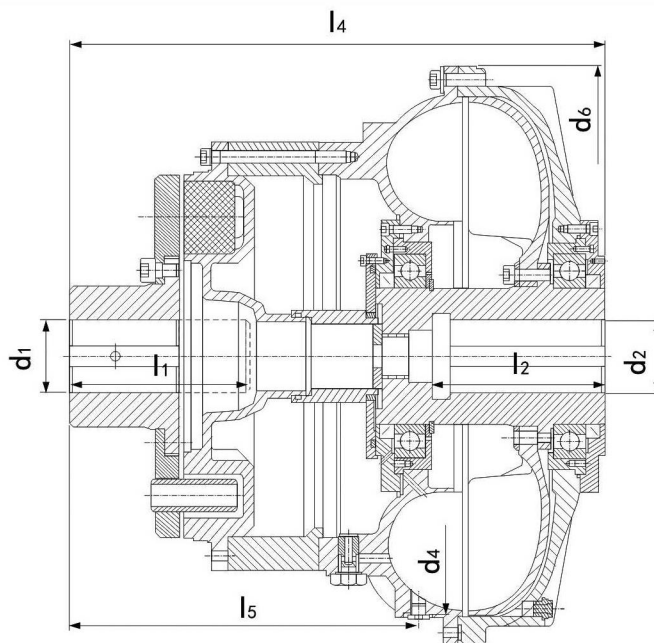
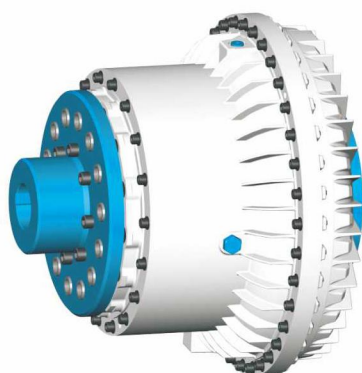
Main dimensions

Table 1

| size | $d_1^{1)}$ | $d_1^{1)}$ | $d_4$ | $d_6$ | $l_1^{2)}$ | $l_2^{2)}$ | $l_4^{4)}$ | $l_5$ | speed<br>$n_{max}$<br>[rpm] | mass <sup>3)</sup><br>$m$<br>[kg] |
|------|------------|------------|-------|-------|------------|------------|------------|-------|-----------------------------|-----------------------------------|
| 274  | 60         | 50         | 272   | 328   | 140        | 110        | 299,5      | 177,0 | 3600                        | 30                                |
| 355  | 85         | 55         | 366   | 424   | 125        | 110        | 309,0      | 159,0 | 3600                        | 45                                |
| 400  | 85         | 70         | 396   | 470   | 145        | 125        | 365,0      | 189,0 | 3000                        | 65                                |
| 450  | 85         | 85         | 456   | 540   | 145        | 165        | 390,0      | 196,0 | 1740                        | 75                                |
| 500  | 95         | 95         | 484   | 575   | 165        | 165        | 427,0      | 204,0 | 1740                        | 90                                |
| 560  | 110        | 110        | 572   | 640   | 170        | 170        | 489,0      | 279,0 | 1740                        | 175                               |
| 630  | 110        | 120        | 646   | 710   | 200        | 170        | 546,0      | 336,0 | 1740                        | 210                               |
| 710  | 140        | 125        | 725   | 820   | 230        | 210        | 606,0      | 335,5 | 1740                        | 330                               |
| 800  | 140        | 150        | 832   | 930   | 260        | 220        | 651,0      | 354,0 | 1475                        | 450                               |
| 900  | 165        | 160        | 890   | 1050  | 300        | 260        | 750,0      | 441,0 | 1475                        | 620                               |
| 1000 | 165        | 160        | 1000  | 1118  | 200        | 280        | 676,5      | 292,5 | 1200                        | 750                               |

## Type HR-CC

- hydrodynamic coupling with enlarged delay chamber



### Ordering example: HR-CC 560-65 H7-70 H7 x140

Designation of a hydrodynamic coupling type HR-CC, nominal size 560, bore of the flexible connection coupling  $d_1=65$  H7, bore of the hydrodynamic coupling  $d_2=70$  H7, for shaft length  $l_2=140$ mm.

Main dimensions

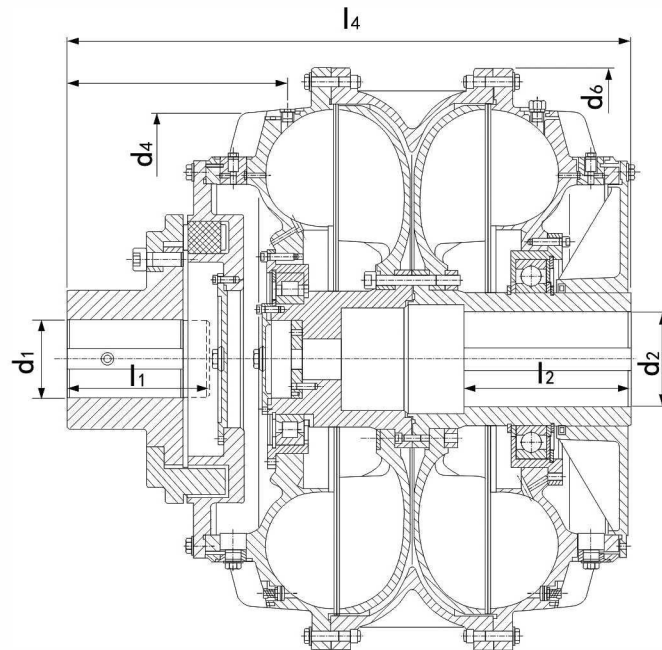
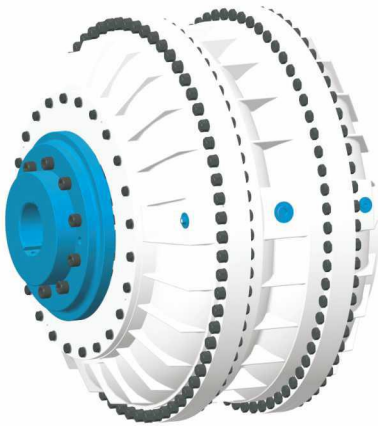
Table 2

| size | $d_1^{1)}$ | $d_1^{1)}$ | $d_4$ | $d_6$ | $l_1^{2)}$ | $l_2^{2)}$ | $l_4^{4)}$ | $l_5$ | speed<br>$n_{max}$<br>[rpm] | mass <sup>3)</sup><br>$m$<br>[kg] |
|------|------------|------------|-------|-------|------------|------------|------------|-------|-----------------------------|-----------------------------------|
| 274  | 60         | 50         | 272   | 328   | 140        | 110        | 339,5      | 217,0 | 3600                        | 32,0                              |
| 355  | 85         | 55         | 366   | 424   | 125        | 110        | 386,0      | 236,5 | 3600                        | 51,4                              |
| 400  | 85         | 70         | 396   | 470   | 145        | 125        | 479,5      | 303,5 | 3000                        | 75,2                              |
| 450  | 85         | 85         | 456   | 540   | 145        | 165        | 504,5      | 310,5 | 1740                        | 85,2                              |
| 500  | 95         | 95         | 484   | 575   | 165        | 165        | 541,5      | 318,5 | 1740                        | 100,2                             |
| 560  | 110        | 110        | 572   | 640   | 170        | 170        | 589,0      | 379,0 | 1740                        | 188,8                             |
| 630  | 110        | 120        | 646   | 710   | 200        | 170        | 646,0      | 436,0 | 1740                        | 223,8                             |
| 710  | 140        | 125        | 725   | 820   | 230        | 210        | 731,0      | 460,5 | 1740                        | 356,6                             |
| 800  | 140        | 150        | 832   | 930   | 260        | 220        | 776,0      | 479,0 | 1475                        | 476,6                             |
| 900  | 165        | 160        | 890   | 1050  | 300        | 260        | 900,0      | 591,0 | 1475                        | 680,0                             |
| 1000 | 165        | 160        | 1000  | 1118  | 200        | 280        | 845,5      | 461,5 | 1200                        | 830,0                             |



## Type HR-D

- hydrodynamic coupling with two hydrodynamic units



### Ordering example: HR-D 560 -65 H7-70 H7 140

Designation of a hydrodynamic coupling type HR- D nominal size 560, bore of the flexible connection coupling  $d_1=65$  H7, bore of the hydrodynamic coupling  $d_2=70$  H7, for shaft length  $l_2=$  mm

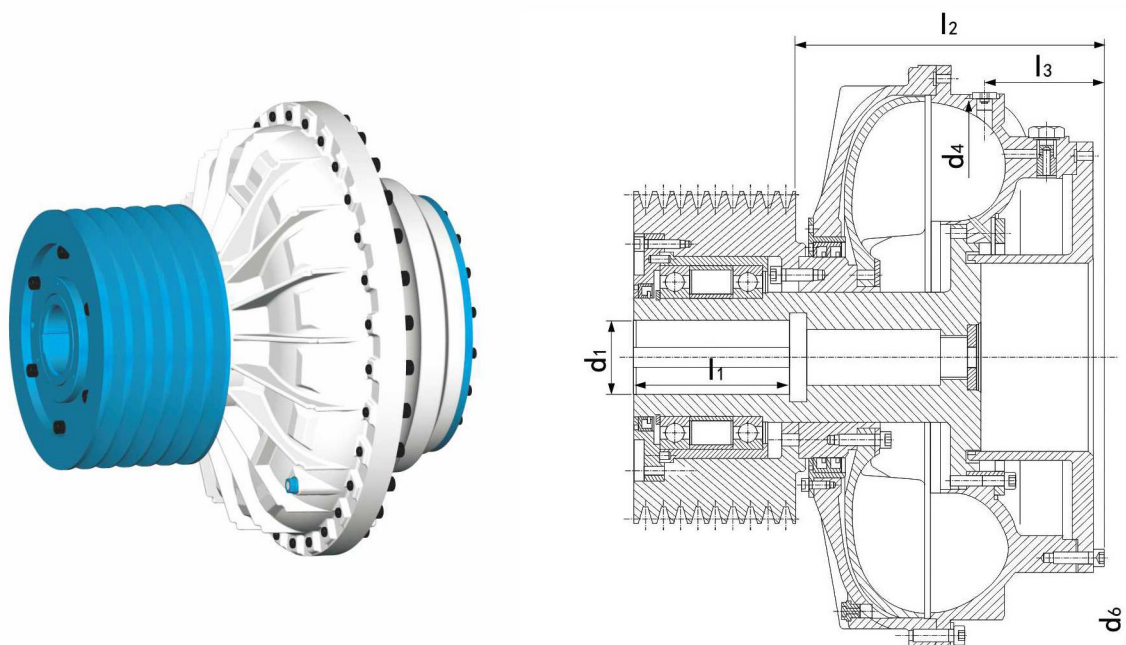
Main dimensions

Table 3

| size | $d_1^{1)}$ | $d_2^{1)}$ | $d_4$ | $d_6$ | $l^{2)}$ | $l_2^{2)}$ | $l_4^{4)}$ | $l_5$ | speed<br>$n_{max}$<br>[rpm] | mass <sup>3)</sup><br>$m$<br>[kg] |
|------|------------|------------|-------|-------|----------|------------|------------|-------|-----------------------------|-----------------------------------|
| 500  | 95         | 95         | 484   | 575   | 165      | 170        | 550        | 204,0 | 1740                        | 125                               |
| 560  | 110        | 110        | 572   | 640   | 170      | 210        | 570        | 279,0 | 1740                        | 245                               |
| 630  | 110        | 120        | 646   | 710   | 200      | 210        | 630        | 336,0 | 1740                        | 300                               |
| 710  | 140        | 125        | 725   | 820   | 230      | 250        | 650        | 335,5 | 1740                        | 460                               |
| 800  | 140        | 150        | 832   | 930   | 260      | 250        | 715        | 354,0 | 1475                        | 630                               |
| 900  | 165        | 160        | 890   | 1050  | 300      | 300        | 900        | 441,0 | 1475                        | 870                               |
| 1000 | 165        | 160        | 1000  | 1118  | 200      | 300        | 980        | 292,5 | 1200                        | 1050                              |

## Type HR-P, HR-CP, HR-CCP

- hydrodynamic couplings of the type HR, HR-C, HR-CC with pulley



### Ordering example: HR-CP 560-70 H7 x 140 KRS400-8 x SPC

Designation of a hydrodynamic coupling type HR-CP, nominal size 560, bore of the hydrodynamic coupling  $d_1 = 70$  H7, for shaft length  $l_1 = 140$  mm, pulley diameter  $d_w = 400-8$  grooves with profile SPC

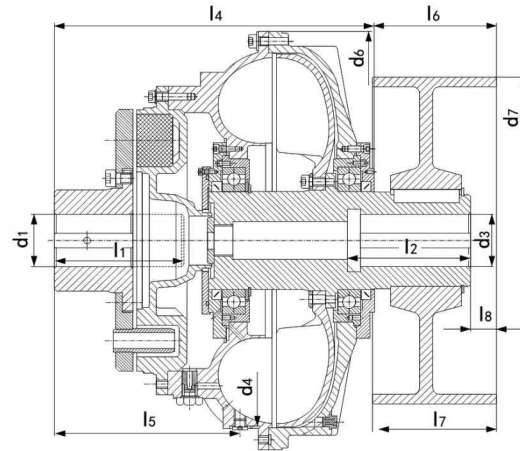
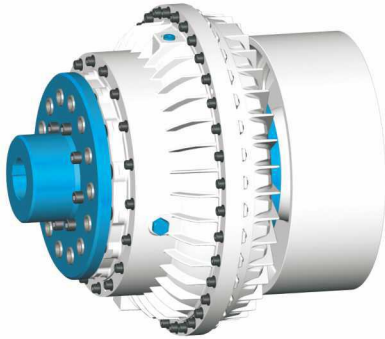
Main dimensions

Table 4

| size | $d_4$ | $d_6$ | $l_2$  | $l_3$ | $l_2$   | $l_3$ | $l_2$    | $l_3$ | mass <sup>6)</sup> m [kg] | mass <sup>6)</sup> m [kg] |
|------|-------|-------|--------|-------|---------|-------|----------|-------|---------------------------|---------------------------|
|      |       |       | TK-N-K |       | TK-N-KV |       | TK-N-KVZ |       | TK-N-K                    | TK-N-KV<br>TK-N-KVZ       |
| 274  | 272   | 328   | 152    | 25,0  | 192,0   | 65,0  | 192,0    | 65,0  | 30                        | 32                        |
| 355  | 366   | 424   | 220    | 65,0  | 297,5   | 142,5 | 297,5    | 142,5 | 45                        | 51                        |
| 400  | 396   | 470   | 276    | 95,0  | 390,5   | 209,5 | 390,5    | 209,5 | 65                        | 75                        |
| 450  | 456   | 540   | 301    | 102,0 | 415,5   | 216,5 | 415,5    | 216,5 | 75                        | 85                        |
| 500  | 484   | 575   | 338    | 110,0 | 452,5   | 224,5 | 452,5    | 224,5 | 90                        | 100                       |
| 560  | 572   | 640   | 316    | 123,0 | 416,0   | 223,0 | 416,0    | 223,0 | 175                       | 189                       |
| 630  | 646   | 710   | 353    | 160,0 | 453,0   | 260,0 | 453,0    | 260,0 | 210                       | 224                       |
| 710  | 725   | 820   | 415    | 142,5 | 540,0   | 267,5 | 540,0    | 267,5 | 330                       | 357                       |
| 800  | 832   | 930   | 460    | 164,0 | 585,0   | 289,0 | 585,0    | 289,0 | 450                       | 477                       |
| 900  | 890   | 1050  | 523    | 218,0 | 673,0   | 268,0 | 673,0    | 368,0 | 620                       | 680                       |
| 1000 | 1000  | 1118  | 538    | 178,0 | 707,0   | 347,0 | 707,0    | 347,0 | 750                       | 830                       |

## Type HR-B, HR-CB, HR-CCB, HR-DB

- hydrodynamic couplings of the type HR. HR-C, HR-CC, HR-D with brake drum according to DIN15431



### Ordering example: HR-CB 560-65 H7-70 H7x140-500x 190

Designation of a hydrodynamic coupling type HR-CB, nominal size 560, bore of the flexible connection coupling  $d_1=65$  H7, bore of the hydrodynamic coupling  $d_3=70$  H7, for shaft length  $l_2=140$  mm, brake drum 500 x 190 mm

Main Dimensions/Characteristic Values

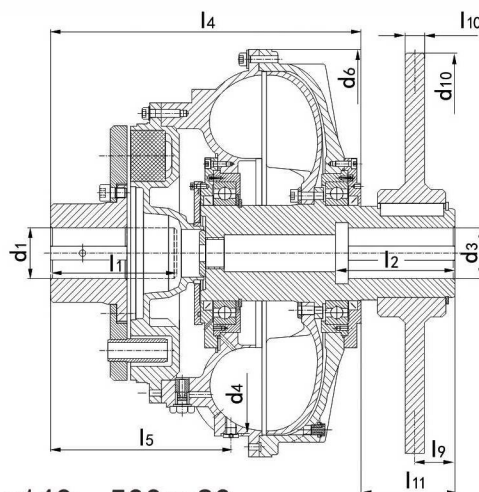
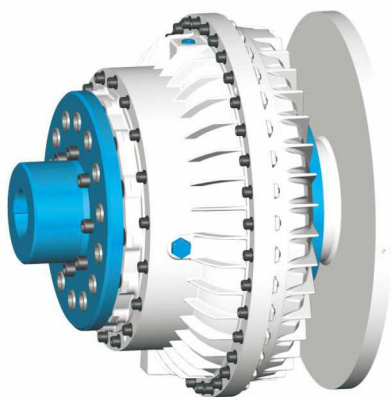
Table 5

| size | brake drum<br>$d_7$ | $d_3^{1)}$        | $l_6$             | $l_7$             | $l_8$            | speed<br>$n_{max}$<br>[rpm] | mass <sup>5)</sup><br>$m$<br>[kg] |
|------|---------------------|-------------------|-------------------|-------------------|------------------|-----------------------------|-----------------------------------|
| 274  | 200<br>250<br>315   | 40<br>40<br>40    | 83<br>103<br>126  | 75<br>95<br>118   | 0<br>20<br>43    | 3600<br>3600<br>3600        | 39<br>47<br>59                    |
| 355  | 200<br>250<br>315   | 50<br>50<br>50    | 83<br>103<br>126  | 75<br>95<br>118   | 0<br>20<br>43    | 3600<br>3600<br>3600        | 54<br>62<br>74                    |
| 400  | 250<br>315<br>400   | 70<br>70<br>70    | 106<br>156<br>216 | 95<br>118<br>150  | 23<br>46<br>78   | 3000<br>3000<br>3000        | 82<br>94<br>117                   |
| 450  | 315<br>400<br>500   | 70<br>70<br>70    | 152<br>216<br>256 | 118<br>150<br>190 | 46<br>78<br>118  | 1740<br>1740<br>1740        | 104<br>127<br>167                 |
| 500  | 315<br>400<br>500   | 70<br>70<br>70    | 152<br>216<br>256 | 118<br>150<br>190 | 46<br>78<br>118  | 1740<br>1740<br>1740        | 119<br>142<br>182                 |
| 560  | 400<br>500<br>630   | 100<br>100<br>100 | 207<br>287<br>333 | 150<br>190<br>235 | 80<br>120<br>166 | 1740<br>1740<br>1740        | 227<br>267<br>349                 |
| 630  | 500<br>630<br>710   | 110<br>110<br>110 | 234<br>276<br>305 | 190<br>236<br>265 | 70<br>101<br>130 | 1740<br>1740<br>1740        | 302<br>384<br>472                 |
| 710  | 500<br>630<br>710   | 125<br>125<br>125 | 243<br>265<br>318 | 190<br>236<br>265 | 70<br>80<br>84   | 1740<br>1740<br>1740        | 422<br>504<br>592                 |
| 800  | 500<br>630<br>710   | 125<br>125<br>125 | 192<br>237<br>315 | 190<br>236<br>265 | 10<br>56<br>75   | 1475<br>1475<br>1475        | 542<br>624<br>712                 |
| 900  | 500<br>630<br>710   | 140<br>140<br>140 | 192<br>237<br>315 | 190<br>236<br>265 | 11<br>57<br>75   | 1475<br>1475<br>1475        | 712<br>794<br>882                 |
| 1000 | 710                 | 160               | 315               | 265               | 75               | 1200                        | 1012                              |



## Type HR-S, HR-CS, HR-CCS, HR-DS

- hydrodynamic couplings of the type HR. HR-C, HR-CC, HR-D with brake drum according to DIN15431



Ordering example: HR-CS 560-65 H7-70 H7 x140 – 500 x 30

Designation of a hydrodynamic coupling type HR-CS, nominal size 560, bore of the flexible connection coupling  $d_1=65$  H7, bore of the hydrodynamic coupling  $d_2=70$  H7, for shaft length  $l_2=140$  mm, brake disk 500 x 30 mm

Main Dimensions/Characteristic Values

Table 6

| size | brake disk<br>$d_{10}$ | $d_3^{1)}$ | $l_9$ | $l_{10}$ | $l_{11}$ | speed<br>$n_{max}$<br>[rpm] | mass <sup>5)</sup><br>$m$<br>[kg] |
|------|------------------------|------------|-------|----------|----------|-----------------------------|-----------------------------------|
| 274  | 200                    | 40         | 18    | 15       | 75       | 3600                        | 36                                |
|      | 355                    | 40         | 19    | 15       | 75       | 3600                        | 46                                |
|      | 400                    | 40         | 30    | 30       | 75       | 3600                        | 51                                |
| 355  | 200                    | 50         | 18    | 15       | 75       | 3600                        | 52                                |
|      | 355                    | 50         | 19    | 15       | 75       | 3600                        | 62                                |
|      | 400                    | 50         | 30    | 30       | 75       | 3600                        | 67                                |
| 400  | 355                    | 70         | 19    | 15       | 100      | 3000                        | 85                                |
|      | 400                    | 70         | 30    | 30       | 100      | 3000                        | 90                                |
|      | 450                    | 70         | 30    | 30       | 100      | 3000                        | 95                                |
| 450  | 400                    | 70         | 30    | 30       | 100      | 1740                        | 102                               |
|      | 450                    | 70         | 30    | 30       | 100      | 1740                        | 107                               |
|      | 500                    | 70         | 30    | 30       | 100      | 1740                        | 113                               |
| 500  | 400                    | 70         | 30    | 30       | 125      | 1740                        | 117                               |
|      | 450                    | 70         | 30    | 30       | 125      | 1740                        | 122                               |
|      | 500                    | 70         | 30    | 30       | 125      | 1740                        | 128                               |
| 560  | 450                    | 100        | 30    | 30       | 125      | 1740                        | 207                               |
|      | 500                    | 100        | 30    | 30       | 125      | 1740                        | 219                               |
|      | 630                    | 100        | 35    | 30       | 125      | 1740                        | 238                               |
| 630  | 500                    | 110        | 30    | 30       | 125      | 1740                        | 254                               |
|      | 630                    | 110        | 30    | 30       | 125      | 1740                        | 401                               |
|      | 710                    | 110        | 35    | 30       | 125      | 1740                        | 553                               |
| 710  | 500                    | 125        | 30    | 30       | 170      | 1740                        | 386                               |
|      | 630                    | 125        | 30    | 30       | 170      | 1740                        | 404                               |
|      | 710                    | 125        | 35    | 30       | 170      | 1740                        | 444                               |
| 800  | 500                    | 125        | 30    | 30       | 170      | 1475                        | 512                               |
|      | 630                    | 125        | 30    | 30       | 170      | 1475                        | 530                               |
|      | 710                    | 125        | 35    | 30       | 170      | 1475                        | 569                               |
| 900  | 630                    | 140        | 30    | 30       | 170      | 1475                        | 706                               |
|      | 710                    | 140        | 30    | 30       | 170      | 1475                        | 749                               |
|      | 800                    | 140        | 35    | 30       | 170      | 1475                        | 770                               |
| 1000 | 800                    | 160        | 35    | 30       | 170      | 1200                        | 900                               |

## Scope of Delivery

### Type HR, HR-C, HR-CC, HR-D

1. Standard fusible plug (140°C) , assembled in the coupling.
2. Exchangeable standard nozzle set beginning with nominal size 560, assembled in the coupling.
3. Fixing elements ( hexagon screw, disk and spring washer), loosely supplied.

### Type HR-P, HR-CP, HR-CCP

1. Pulley type and dimension according to customers request mounted on the coupling.
2. Standard fusible plug(140°C) , assembled in the coupling.
3. Exchangeable standard nozzle set beginning with nominal size 560, assembled in the coupling.
4. Fixing elements ( hexagon screw, disk and spring washer ) , loosely supplied.

### Type HR-B, HR-CB, HR-CCB, HR-DB & HR-S,HR-CS, HR-CCS, HR-DS

- 1.Brake drum or brake disk, in dimension and type according to customers request, possibly with connection elements, mounted on the coupling.
- 2.Standard fusible plug (140°C) , assembled in the coupling.
3. Changeable standard nozzle set beginning with nominal size 560, assembled in the coupling.
4. Fixing elements ( hexagon screw, disk and spring washer), loosely supplied.

## Recommended materials for brake drum and brake disks

| Material                                                | Remark                                                                                                                                                          | Recommended utilization case                           |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| EN-GJL-250 DIN EN 1561                                  | high frictional coefficient、 low permissible speed、 low wear                                                                                                    | holding and service brakes                             |
| EN-GJS-400-15U DIN EN 1563<br>EN-GJS-700-2U DIN EN 1563 | low frictional coefficient<br>very good wearing properties                                                                                                      | service brake                                          |
| GE 300 DIN EN 10293<br>hard chromium plate              | minimum of 300 Brinell hardness decrease in frictional coefficient at high temperatures                                                                         | service brake                                          |
| GE 300 DIN EN 10293<br>hardened                         | minimum of 300 Brinell hardness<br>high frictional coefficient over a wide range of temperature<br>good temperature stability<br>of frictional coefficient wear | holding brakes and service brakes at high temperatures |
| GE 300 DIN EN 10293<br>untreated                        | average frictional coefficient<br>low surface solidity leads to pickup and thus to a high level of wear                                                         | holding brake                                          |

## Balance

The couplings will be dynamically balanced. Standard balancing quality is Q6,3 at 1500rpm according to VDI 2060 in two planes. Other balancing qualities possible. Please contact us.

## Operation Liquid

### Operation liquid

The operation liquid has to have the following characteristic values:

Table 7

|                             |                             |
|-----------------------------|-----------------------------|
| kinematic viscosity at 40°C | 27–60 cSt                   |
| density at 20°C             | 0.85–0.91 g/cm <sup>3</sup> |
| flashing point              | 170°C                       |
| solidification point        | –25°C at outside operation  |
| water conten                | 0.1%                        |
| tendency towards foaming    | low                         |

### Recommended oils

Followings sorts of oil are useable:

Table 8

| oil brand           | oil type          |
|---------------------|-------------------|
| Addinol             | H 46 R/TL 36      |
| BP Oil              | HL 32/HL 22       |
| Deutsche Shell      | Shell Tellus 32   |
| Winter shall AG     | Wiolan HF 32      |
| Mobil Oil AG        | Mobilfluid 120    |
| Deutsche Total GmBH | Total Azolla 32   |
| Esso AG             | Torque Fluid N 45 |
| DEA Mineralöl AG    | Astron HLP 32     |

Hydrodynamic couplings with special working conditions or by using different sorts of oil, please contact us.

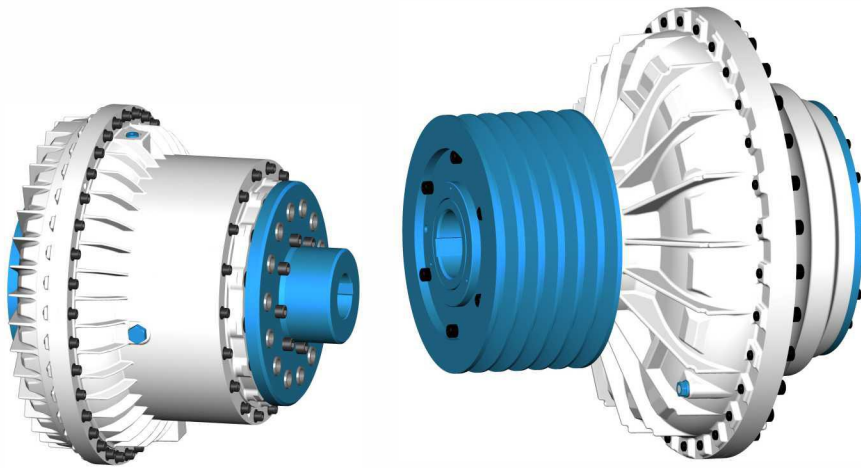
### Quantities of oil

The oil quantity depends on the type of coupling and the transmitted drier power. Further information concerning oil fill level are available in coupling installation instruction. System related adjustments have to align on site.

### Operating medium water

Hydrodynamic couplings can also with a water glycol mixture can be operated. The advantages of this equipment are the cost-effective procurement and Presence of increased environmental regulations. Construction of this Input use an additional encapsulation of the bearings. The rolling bearings can no longer be on the made oil fill, but is a lifetime grease ensured.





## Optional Accessory

### Insert Bushings

By using of insert couplings of the same size and type can be adapted to different shaft diameter and shaft length. The insert bushing can be delivered in pilot and finished bore for the insert bushings intended types on request.

### Protection cover

In order to protect staff against unintentional touch of the rotating parts of the hydrodynamic coupling a protection cover is necessary. The design of the cover has to be made in such a way that the cooling of the coupling by an air circulation is guaranteed. Covers in standard or special design are available on request.

### Mechanical thermal switch off device

Hydrodynamic couplings are protected against damage due to high operation temperature by a fusible plug. The mechanical thermal switch off device has a lower reaction temperature than a fusible plug and avoids in the case of thermal overload the loss of the operation liquid by delivering a mechanical signal. By using the signal the drive system can be switched off.

### Electronical thermal switch off device

Hydrodynamic couplings are protected against damage due to high operation temperature by a fusible plug. The electronical thermal switch off device has a lower reaction temperature than a fusible plug and avoids in the case of thermal overload the loss of the operation liquid by delivering a signal. The signal will be picked up touchless from a sensor, transferred to an analysis unit and converted into a signal for switching off the drive system.

### Replacement for the fusible plug

The delivery of replacements for the fusible plug, also for different reaction temperatures, is possible on request.

### Nozzle Sets

Hydrodynamic couplings beginning with nominal size 560 will be delivered with an exchangeable standard nozzle set. By using of adapted nozzles the start up characteristic of the coupling can be adjusted to the application within a special range.

These nozzles are available on request.

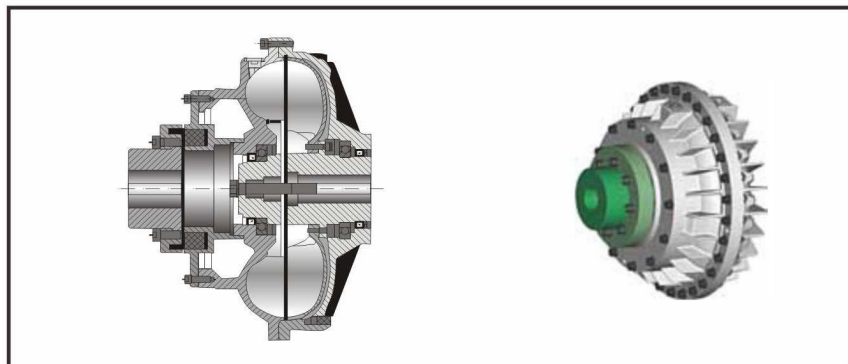
### Oil filling

According to standard hydrodynamic couplings will be delivered without oil filling. The oil filling can be delivered separately in usual package units.

## Type List

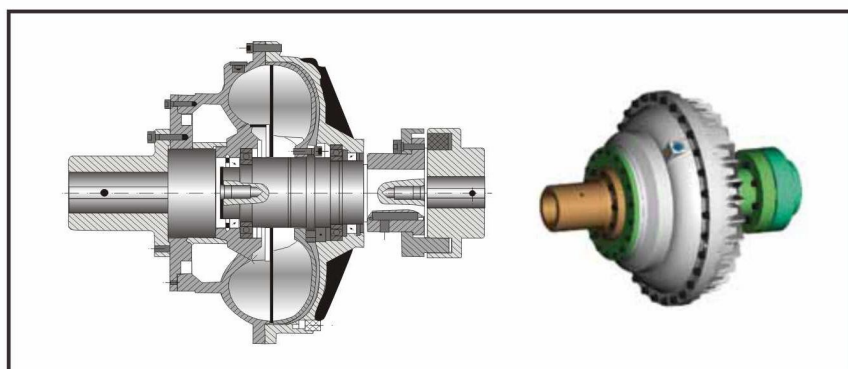
### HR-C

Type HR-C hydrodynamic coupling with delay chamber



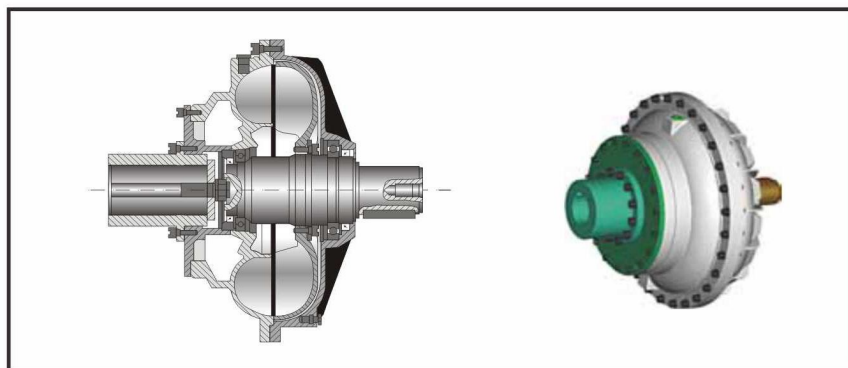
### HR-C-MRR

Type HR-C hydrodynamic coupling with delay chamber  
Type MRR coupling body removable radially without moving the drive and driven unit



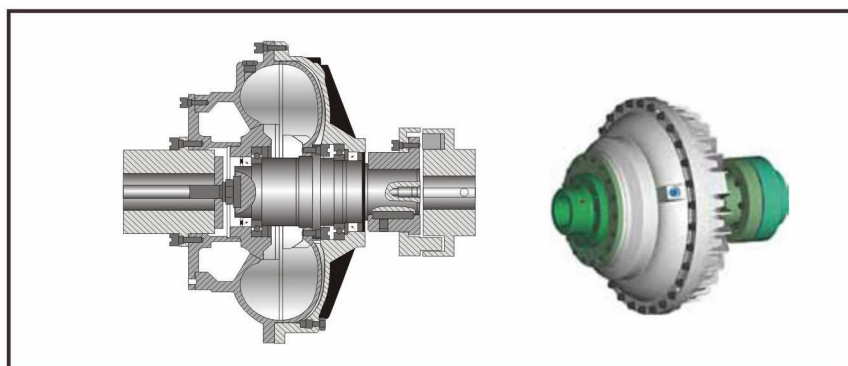
### HR-C-MBW

Type HR-C hydrodynamic coupling with delay chamber  
Type MBW the motor end bears the weight without flexible connecting coupling



### HR-C-MB

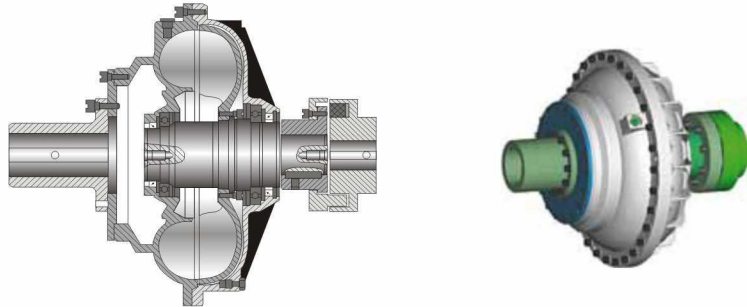
Type HR-C hydrodynamic coupling with delay chamber  
Type MB The motor end bears the weight with flexible connecting coupling



## Type List

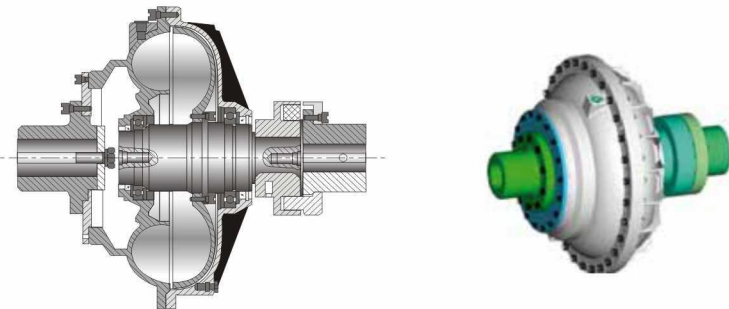
### HR-MRR

Type HR hydrodynamic coupling without delay chamber  
Type MRR coupling body removable radially without moving the drive and driven unit



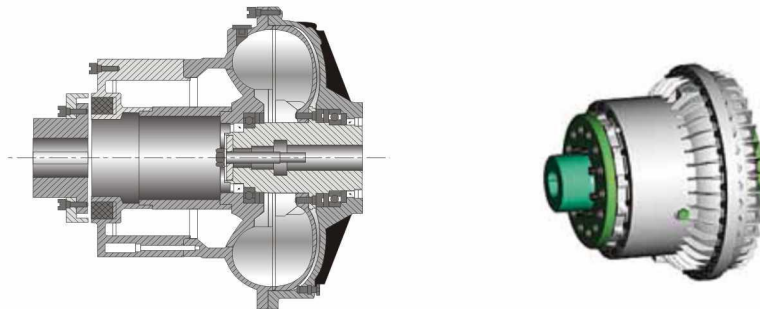
### HR-MB

Type HR hydrodynamic coupling without delay chamber  
Type MB The motor end bears the weight



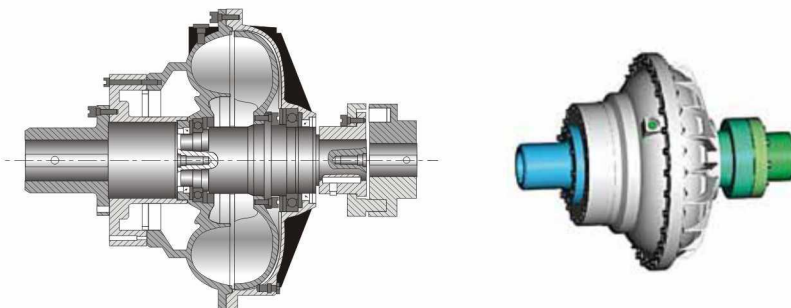
### HR-CC

Type HR-CC hydrodynamic coupling with an extended delay chamber



### HR-CC-MRR

Type HR-CC hydrodynamic coupling with an extended delay chamber  
Type MRR coupling body removable radially without moving the drive and driven unit



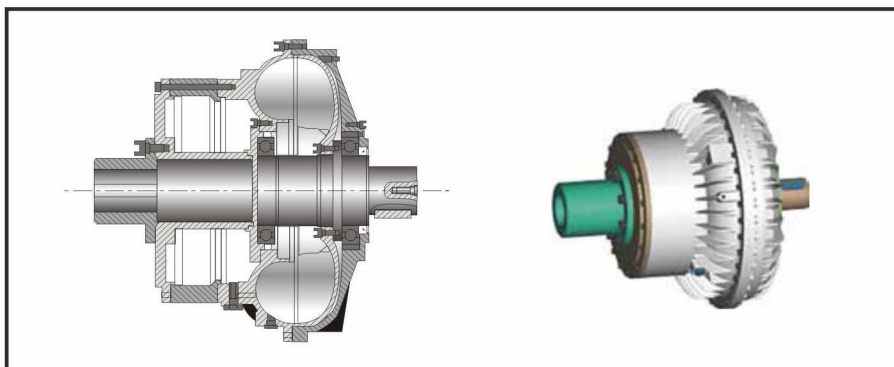


## Type List

### HR-CC-MRW

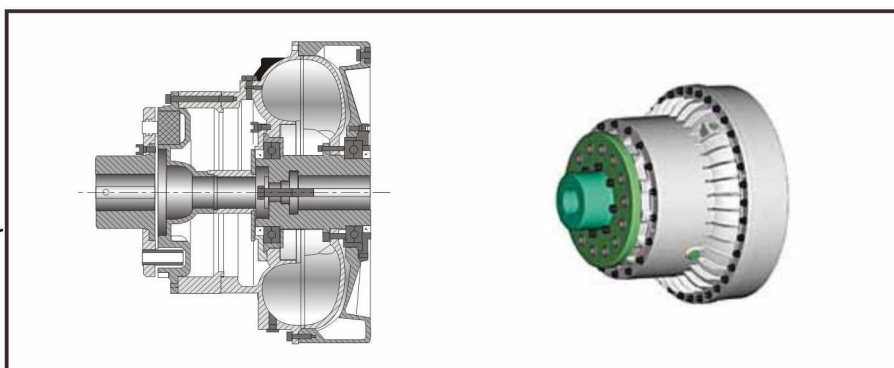
Type HR-CC hydrodynamic coupling with an extended delay chamber

Type MRW coupling body removable radially without moving the drive and driven unit and flexible connecting coupling



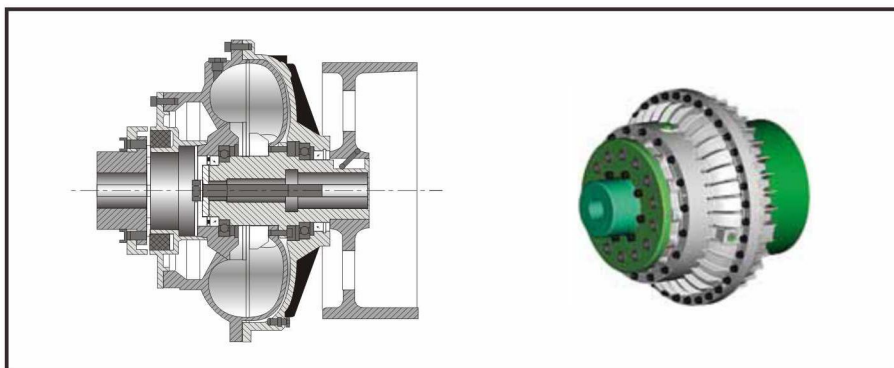
### HR-CCZ

Type HR-CCZ hydrodynamic coupling with an enlarged delay chamber and additional chamber



### HR-CB

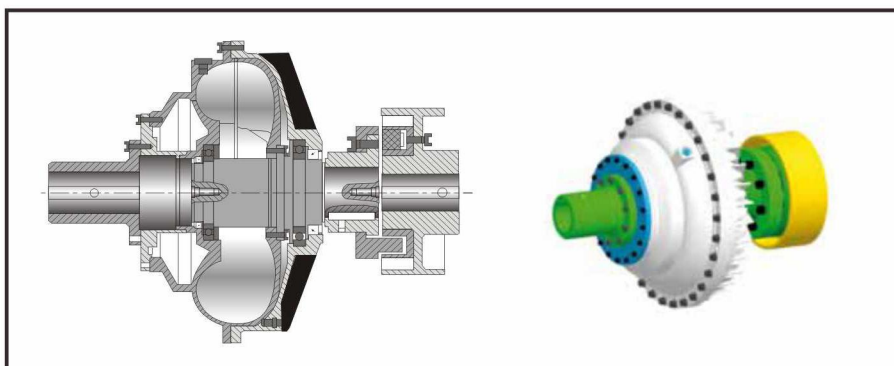
Type HR-CB hydrodynamic coupling with delay chamber and brake drum



### HR-B-MRR

Type HR-B hydrodynamic coupling without delay chamber, with brake drum

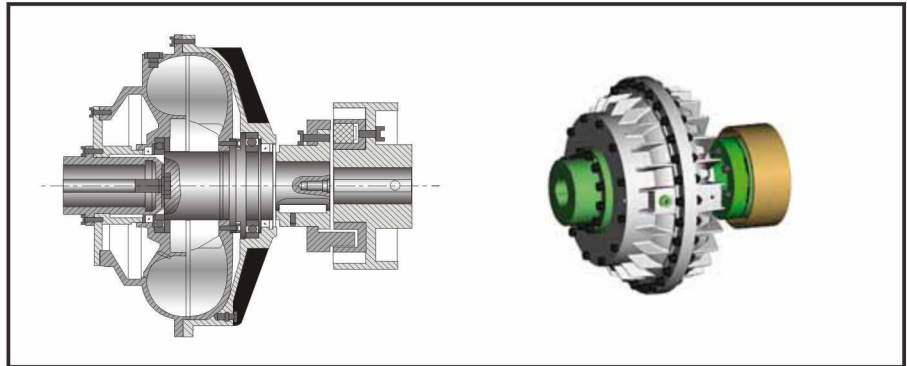
Type MRR coupling body removable radially without moving the drive and driven unit



## Type List

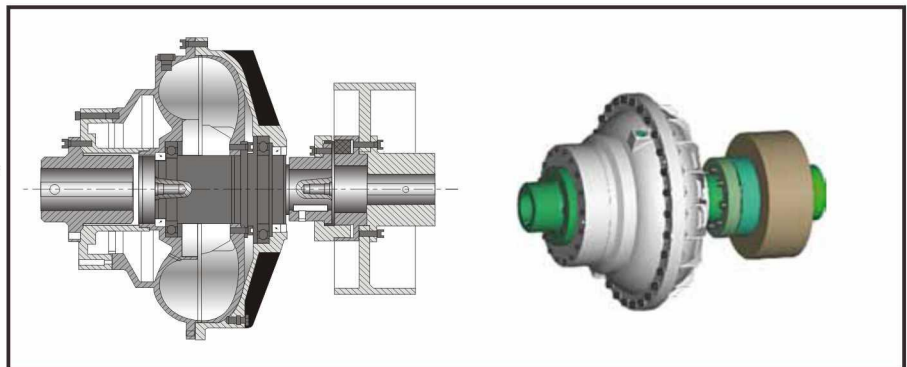
### HR-CB-MB

Type HR-CB hydrodynamic coupling with delay chamber and brake drum  
Type MB The motor end bears the weight



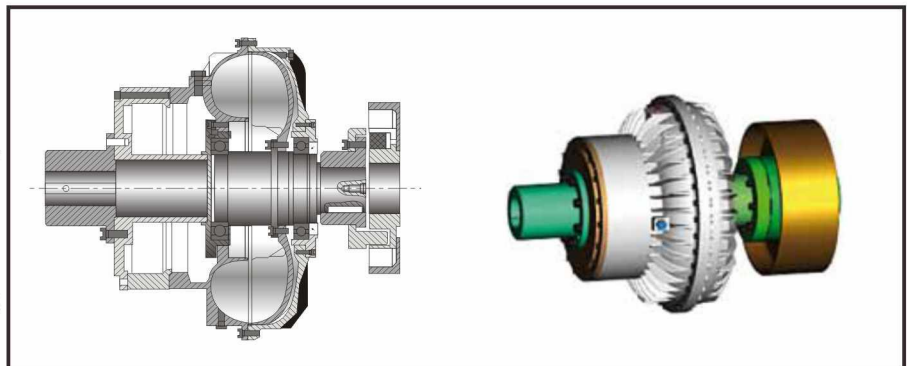
### HR-CCB-MB

Type HR-CCB hydrodynamic coupling with an extended delay chamber and brake drum  
Type MB The motor end bears the weight



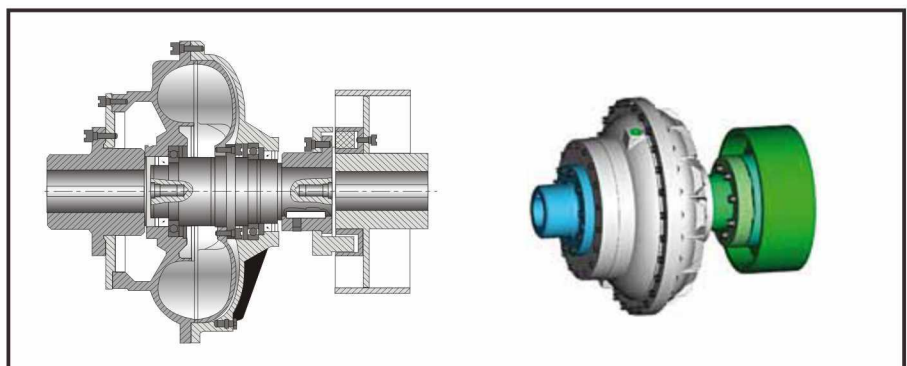
### HR-CCB-MRR

Type HR-CCB hydrodynamic coupling with an extended delay chamber and brake drum  
Type MRR coupling body removable radially without moving the drive and driven unit



### HR-B-MB

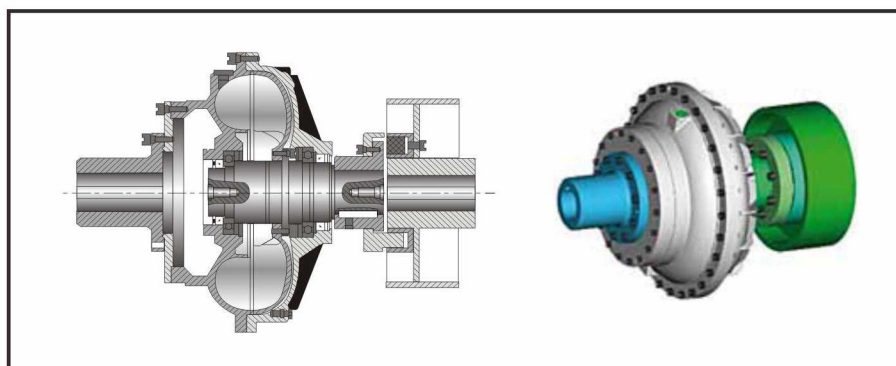
Type HR-B hydrodynamic coupling without delay chamber with brake drum  
Type MB The motor end bears the weight



## Type List

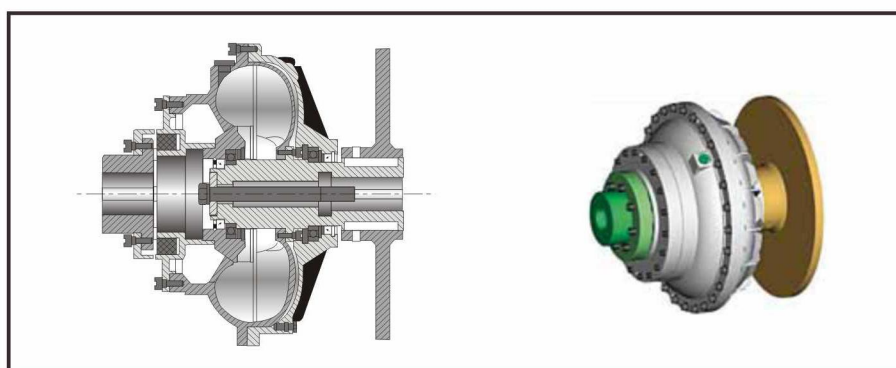
### HR-B-MRR

Type HR-B hydrodynamic coupling without delay chamber, with brake drum  
Type MRR coupling body removable radially without moving the drive and driven unit



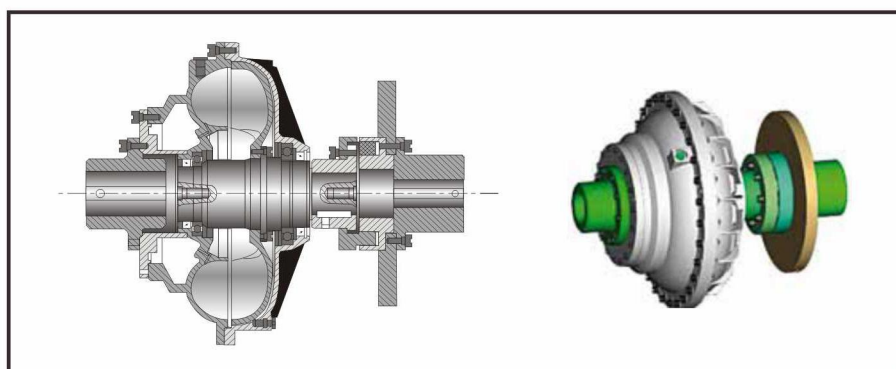
### HR-CS

Type HR-CS hydrodynamic coupling with delay chamber and brake disk



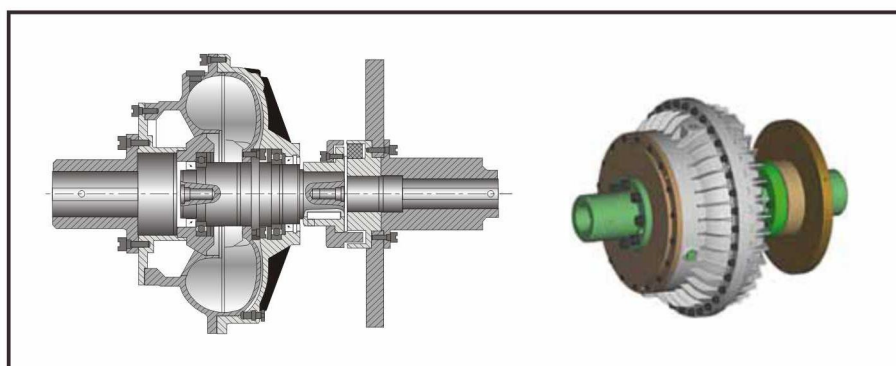
### HR-CS-MB

Type HR-CS hydrodynamic coupling with delay chamber and brake disk  
Type MB The motor end bears the weight



### HR-CS-MRR

Type HR-CS hydrodynamic coupling with delay chamber and brake disk  
Type MRR coupling body removable radially without moving the drive and driven unit

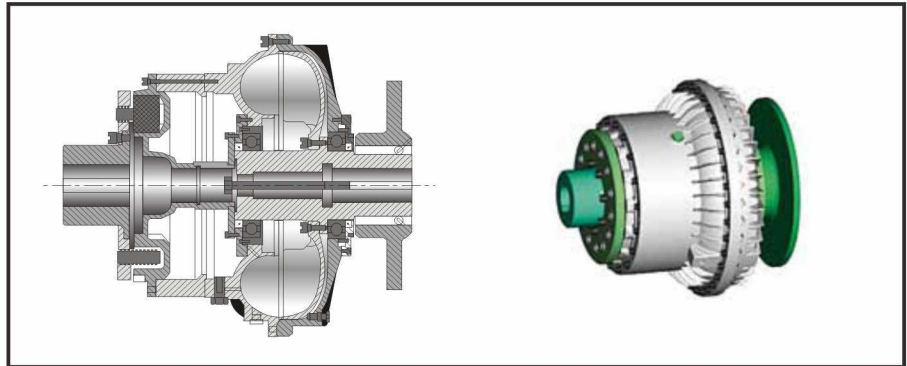




## Type List

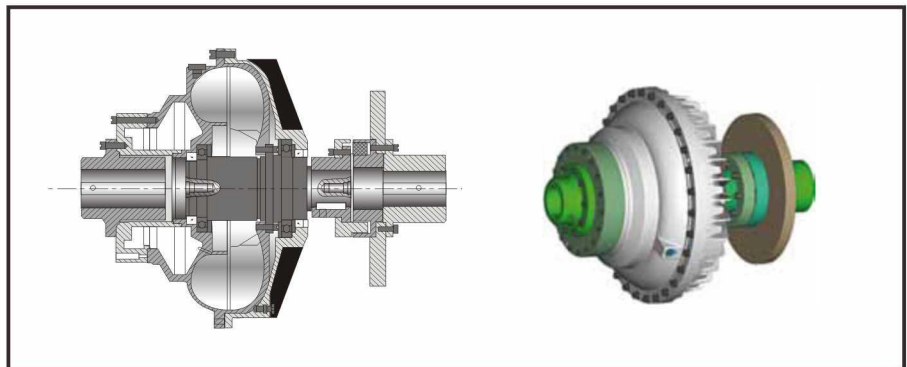
### HR-CCS

Type HR-CCS hydrodynamic coupling with an extended delay chamber and brake disk



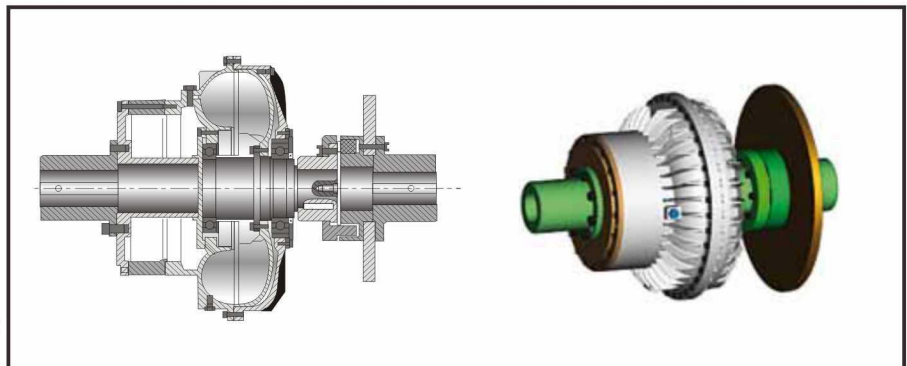
### HR-CCS-MB

Type HR-CCS hydrodynamic coupling with an extended delay chamber and brake disk  
Type MB The motor end bears the weight



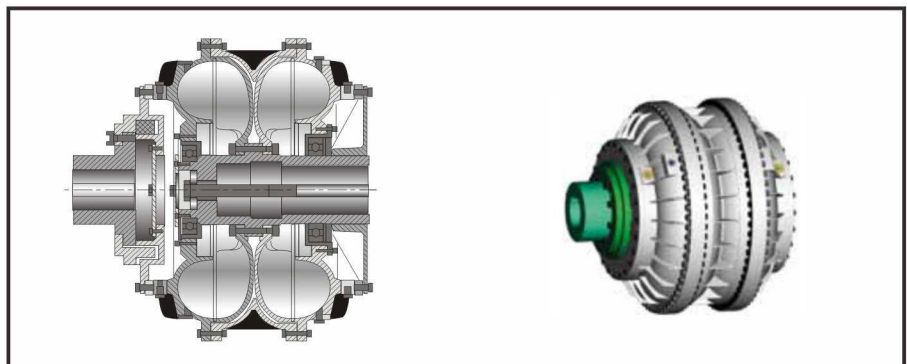
### HR-CCS-MRR

Type HR-CCS hydrodynamic coupling with an extended delay chamber and brake disk  
Type MRR coupling body removable radially without moving the drive and driven unit



### HR-CD

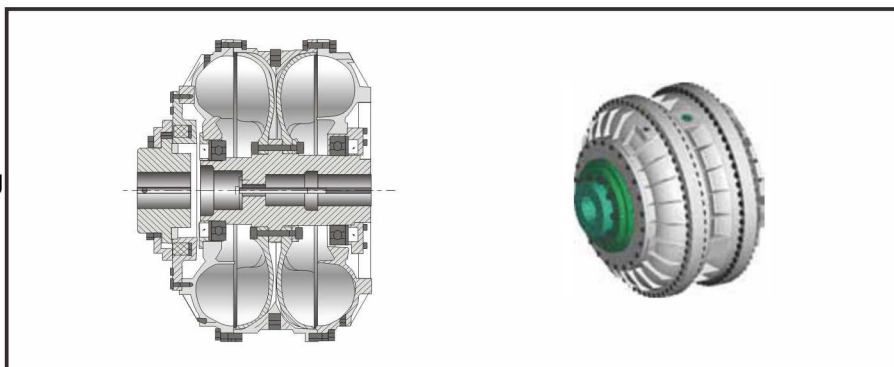
Type HR-CD hydrodynamic coupling with two hydrodynamic units and a delay chamber



## Type List

### HR-D

Type HR-D hydrodynamic coupling  
with two hydrodynamic units

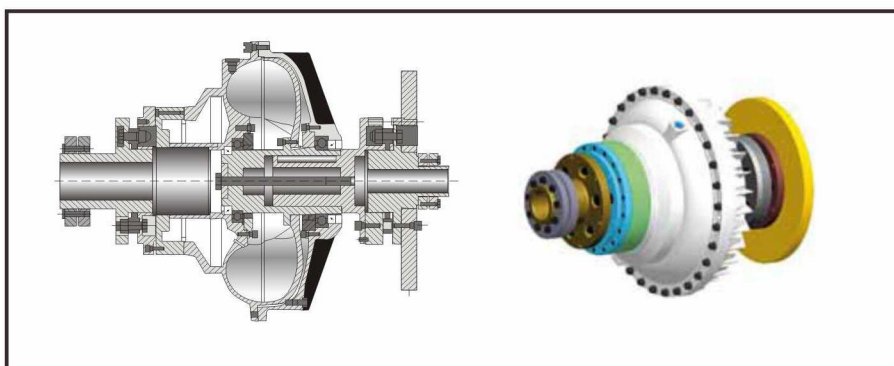


### HR-CCS-AMC-ve

Type HR-CCS hydrodynamic coupling  
with an extended delay chamber and  
brake disk

Type AMC hydrodynamic coupling with  
all-metal clutch

Type ve hydrodynamic coupling with  
special design external damping sets

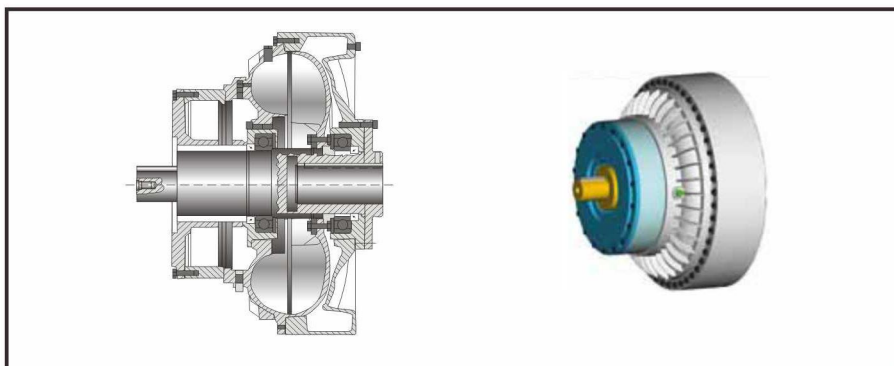


### HR-CCZ-MBW-V

Type HR-CCZ hydrodynamic coupling  
with an extend delay chamber and  
brake disk

Type MBW the motor end bears the  
weight without flexible connecting  
coupling

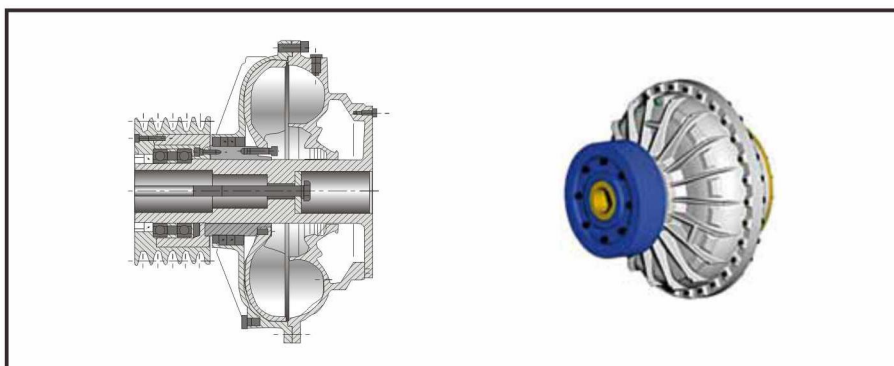
Type v hydrodynamic coupling with  
special design



### HR-CP-r

Type HR-CP hydrodynamic coupling  
with delay chamber and pulley

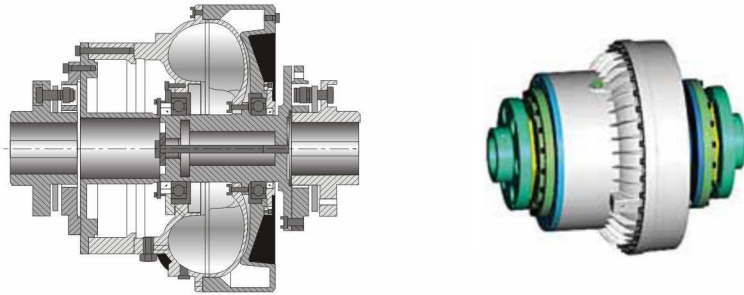
Type r Replaceable pulley



## Type List

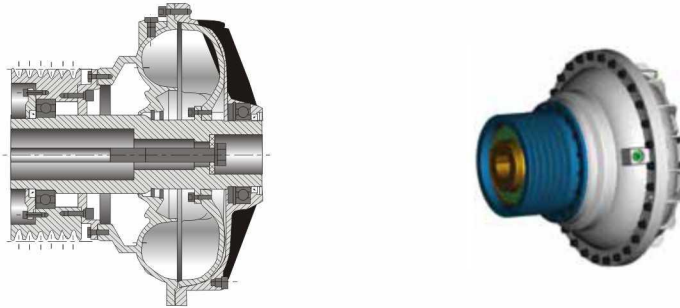
### HR-CCZ-AMC

Type HR-CCZ hydrodynamic coupling with an enlarged delay chamber and additional chamber  
Type AMC hydrodynamic coupling with all-metal clutch



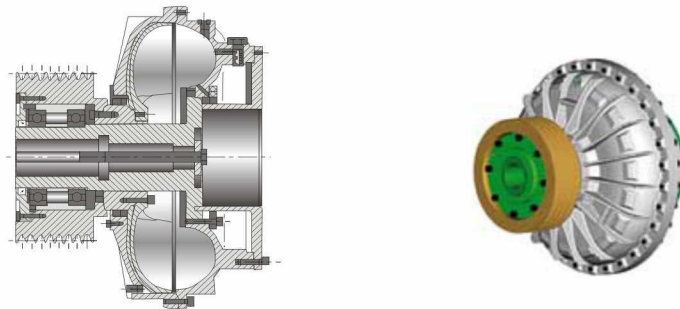
### HR-CP-id

Type HR-CP hydrodynamic coupling with delay chamber and pulley  
Type id Internal drive



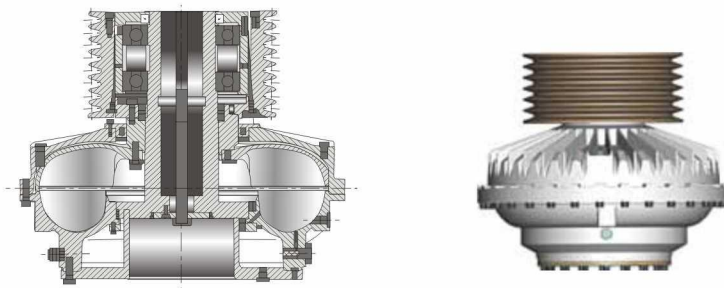
### HR-CP

Type HR-CP hydrodynamic coupling with delay chamber and pulley



### HR-CP-vin

Type HR-CP hydrodynamic coupling with delay chamber and pulley  
Type vin Vertical Installation

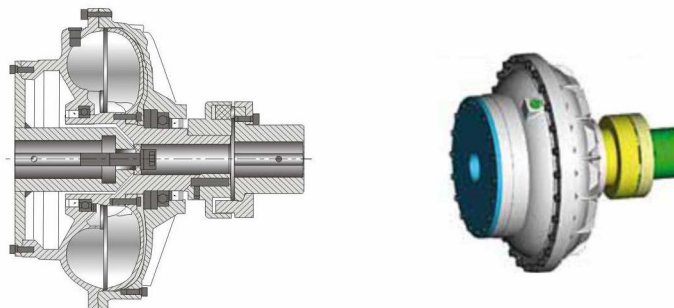




## Type List

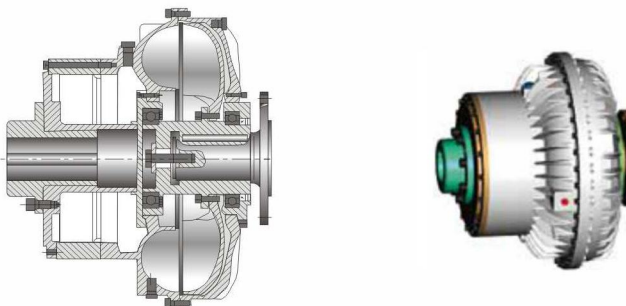
### HR-MB-v

Type HR hydrodynamic coupling  
without delay chamber  
Type v hydrodynamic coupling  
with special design



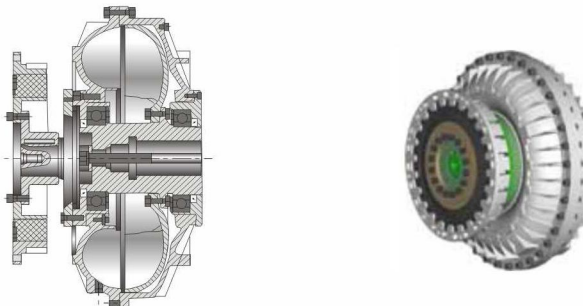
### HR-CC-DF-v

Type HR-CC hydrodynamic coupling  
with an extended delay chamber  
Type DF hydrodynamic coupling with  
drive shaft flange  
Type v hydrodynamic coupling with  
special design



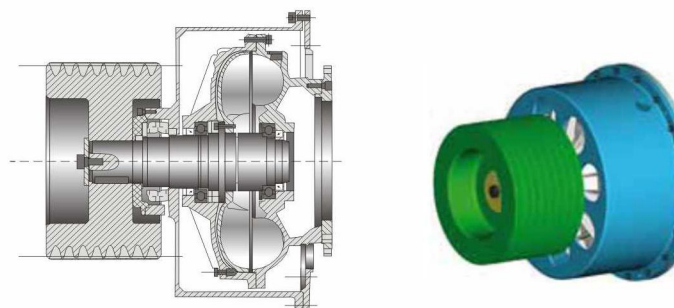
### HR-ded-v

Type HR hydrodynamic coupling  
without delay chamber  
Type ded Diesel engine drive  
Type v hydrodynamic coupling with  
special design



### HR-dedh-v

Type HR hydrodynamic coupling  
without delay chamber  
Type dedh Diesel engine drive and  
housing  
Type v hydrodynamic coupling with  
special design





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