TRANSFLUID

TRANSFLUID
trasmissioni industriali

SH-SHC
OIL ACTUATED CLUTCHES

drive with us

SH-SHC OIL ACTUATED CLUTCHES

Transfluid oil actuated are wet type, multiple sintered plate units designed to run in oil and actuated by oil pressure.

Advantages of Transfluid oil actuated clutches:

1. **No adjustment required for wear**, because the piston advances automatically adjusting for wear.

2. **Constant torque for the life of the friction plates**, because there is no requirement for periodic regulations.

3. **Compact size to torque capacity because the torque is not affected by worn plates and no adjustment space is required.** Therefore, the clutch can be mounted in compact spaces with an overall reduction in equipment dimensions.

4. **High torque capacity because the engagement effort is created by oil pressure and no manual effort is required**. This is even more evident in larger clutches.

5. **Easy automated remote control** because of hydraulic control. This eliminates the need for complex activation systems. Therefore the clutch is easily incorporated in equipment requiring semi-automatic or automatic cycles.

OTHER ADVANTAGES:

6. **No worn plates due to incorrect adjustment** because the hydraulic actuation requires no regulation.

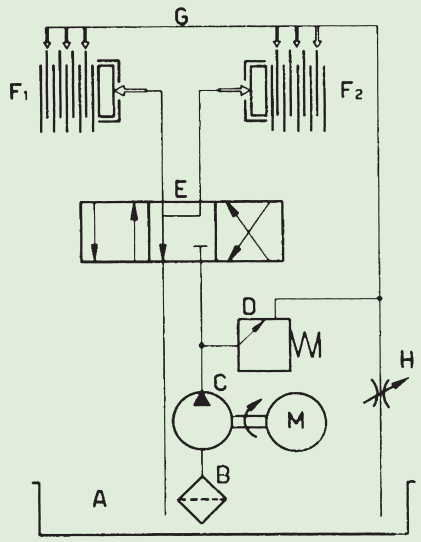
7. **Long life of friction plates** which becomes very important where an interruption can cause problems in the assembly line.

- **Actuating oil flows indicated are calculated for 0.1 sec. engagement time. Engagement time is proportional to oil flow.**
- **Forced lubrication is recommended. If this is not possible splash lubrication is permitted provided friction plates are immersed 8 mm. or less.**
- **Oil viscosity to be 32 cST or less (at 40°C) if piping passages are the minimum recommended.**
- **Lubrication oil flow to be 1 lt/min. x 7.5 kW for machine tools and 2 lt/min. x 7.5 kW for vehicle transmissions.**

Capacity data			630	640	650	660	670
Max torque		Nm	108	196	392	745	1157
Oil flow		lt/min	7.5	11	20	32	50
Max press		bar	12	16	16	16	16
Max speed		r.p.m.	5000	4500	3500	2900	2500
J	Input	$Kgcm^2$	10	37	102.5	227.5	450
	Output	$Kgcm^2$	1.8	5.8	21.3	30	82.5

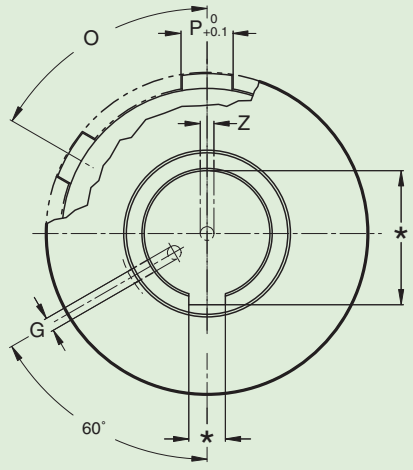
Torque at 10 bar engaging pressure - Oil flow to engage in 0.1 sec.

◤Only upon request

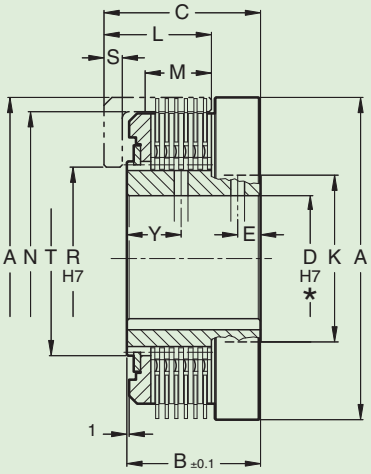


STANDARD HYDRAULIC CIRCUIT

A	-	Sump
B	-	Suction filter
C	-	Pump
D	-	Relief valve
E	-	Control valve
F_1 - F_2	-	Clutches
G	-	Lubrication line
H	-	Lubrication flow control valve



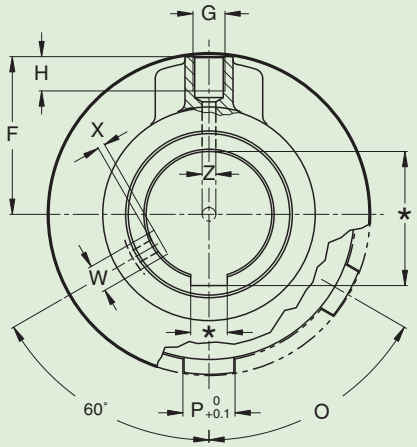
SH
without collector



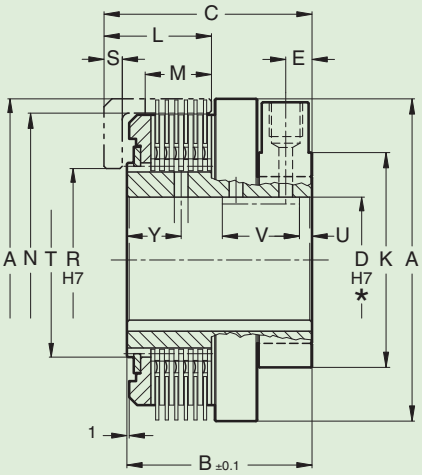
Dimensions

Size	A	B	C	D min	D max	E	G	K	L	M	N	O	P	R	S	T	Y	Z	Weight Kg
SH 630	86	51	58	18	30	8.5	5	40	40	30	78	6x60°	19	47	5	46	19.5	5	1.5
SH 640	112	54	63	25	48	9.5	5	60	44	29	103	6x60°	19	68	7	66	22	5	2.8
SH 650	141	58	68.5	35	62	9.5	6	77	47	29	128.5	6x60°	22.2	80	8	85	24	6	4.8
SH660	168	59.5	72.5	45	72	10.5	8	90	49	29	154	12x30°	15.8	100	10	96	24.5	6	7.3
SH 670	195	72	86	55	82	12	9	100	60	38	180	12x30°	19	110	11	106	27.5	8	11.6

*To be specified with order – Keyway UNI 6604-69 - DIN 6885/1 – D max. with DIN 6885/2 keyway
◤Only upon request – Dimensions can be changed without notice



SHC
with collector



Dimensions

Size	A	B	C	D min	D max	E	F	G	H	K	L	M	N	O	P	R	S	T	U	V	W	X	Y	Z	Weight Kg
SHC 630	86	71	78	18	30	10	41	M12x1.5	12	56	40	30	78	6x60°	19	47	5	46	7	26	8	2	19.5	5	1.7
SHC 640	112	76	85	25	45	11	54	M12x1.5	12	75	44	29	103	6x60°	19	68	7	66	7.5	28	10	2.5	22	5	3.5
SHC 650	141	81	91	35	58	11.5	69	M14x1.5	15	94	46	29	128.5	6x60°	22.2	80	8	85	7.5	30	12	3	24	6	6
SHC 660	168	85.5	98.5	45	68	13	82	M14x1.5	15	108	49	29	154	12x30°	15.8	100	10	96	8.5	33	12	3.5	24.5	6	9.1
SHC 670	195	99	113	55	76	13.5	95	M14x1.5	15	122	60	38	180	12x30°	19	110	11	106	8.5	36	14	4	27.5	8	13.9

*To be specified with order – Keyway UNI 6604-69 - DIN 6885/1 – D max. with DIN 6885/2 keyway
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STEP 1 – DETERMINE REQUIRED TORQUE

• Table A - Service factor S

Prime mover	Driven equipment load classification			
	light load	mod. load	mid load	heavy load
AC elect Motor	1	1.5	2	2.5
Diesel engine	1.5	2.0	2.5	3.0

- The motor size may be used to determine the torque required for the clutch:

  T = 9550 x Kw / rpm (Nm)

- In addition to the nominal torque to be transmitted, it is necessary to consider the torsional characteristic of the system. It is practical to use a sevice factor which depends upon prime mover and type of load:

$T_{KN} \geq S \times T$, where S factor is taken from table A

STEP 2 - QUICK SELECTION WITH TORQUE

- Determine the clutch model and using diagram of Fig. **1** determine clutch size having the required torque capacity at the available pressure
- Check that selected clutch can accommodate the bore size required

STEP 3 - VERIFY CLUTCH ENERGY CAPACITY

$$E = 0{,}005482 \times J \times (n_2^2 - n_1^2) \leq Q$$

- Assuming:

E = Kinetic Energy (Joule)
J = Inertia referred to shaft (kgm^2)
n_1 = Initial speed (rpm)
n_2 = Final speed (rpm)

- Using diagram of Fig. **2** verify that selected clutch is correct for required cyclic rate
- If the operating point is above the curve reselect clutch based on energy capacity
- Note: $J = PD^2/4$

Fig. **1**

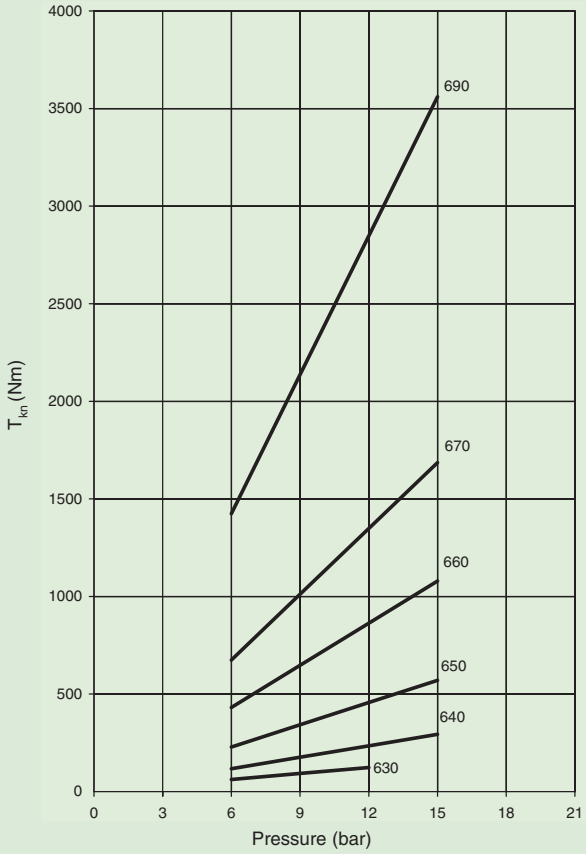
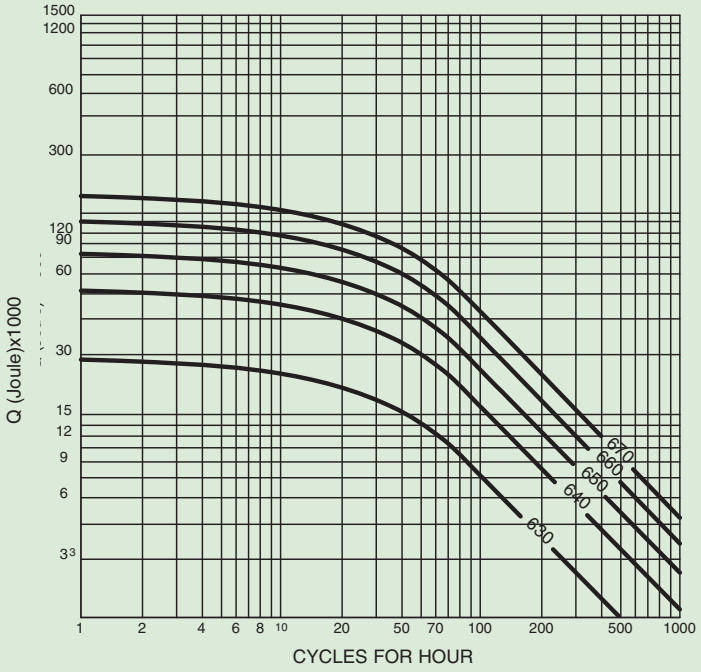


Fig. **2**



The cooling rates represented by the above curves are based on an external lubricant flow of 4 liters per minute through the disc pack