HURTH MARINE GEAR

HSW 800 A2 Marine Transmission

HSW 800 A2:
Designed and engineered for many different types of boats

On account of its inclined output shaft, the HSW 800 A2 is mainly used in boats with planing and semi-displacement hulls, such as pleasure and sports boats, taxi boats, search boats, police and pilot vessels.

Compact design to increase the boat's useful area

In order to reduce the mounting space for the drive unit, the connecting flange for the propeller shaft is inclined through 8°. Along with the compact and space-saving design of the HSW 800 A2, additional room is thus obtained for the cabin area.

High gear train efficiency thanks to tapered helical gears

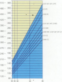
The transmission is characterized by its output shaft inclined through 8°. The angle of inclination is obtained by a tapered helical gearing developed by HURTH. All gears are helical, case hardened and super-finished, to ensure quiet operation and an excellent engine load factor.

Easy and reliable, hydraulically operated shifting

The HSW 800 A2 is easily and reliably actuated via the hydraulically operated multiple disc clutch. Shifting is started by actuating the shift lever.

The housing is made of a special aluminum alloy. The corrosion resistance to seawater is improved by chromatizing. The thrust bearing of the propeller is integrated into the transmission. An integrated gear pump provides a hydraulic fluid and lubrication oil flow, while a fine mesh filter installed in the suction line assures a long service life and high dependability in operation.

A safety neutral switch to be connected to the starter assures that the engine can only be started in the "0" position (with the propeller shaft disengaged).



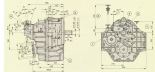
Technical data		HSW 800 A 2	1.2	1.4	1.6	2.0	2.5	2.85
Shifting position "A"		ratio	1.20:1	1.41:1	1.57:1	1.96:1	2.50:1	2.85:1
Shifting position "B"		ratio	1.20:1	1.41:1	1.57:1	1.96:1	2.50:1	2.85:1
Power input max.	Pleasure Craft (PC)	kW (BHP)	377 (506)	377 (506)	377 (506)	377 (506)	356 (477)	335 (449)
	Intermediate Duty (MD)	kW (BHP)	297 (398)	297 (398)	297 (398)	297 (398)	280 (375)	264 (354)
	Continuous Duty (CC)	kW (BHP)	264 (354)	264 (354)	264 (354)	264 (354)	251 (337)	234 (314)
Input torque max.	Pleasure Craft (PC)	Nm (lbft)	900 (664)	900 (664)	900 (664)	900 (664)	850 (627)	800 (590)
	Intermediate Duty (MD)	Nm (lbft)	710 (524)	710 (524)	710 (524)	710 (524)	670 (494)	630 (465)
	Continuous Duty (CC)	Nm (lbft)	630 (465)	630 (465)	630 (465)	630 (465)	600 (442)	560 (413)
Input speed max.		rpm	4200					
Weight without fluid appr.		kg (lb)	64 (141)					
Fluid capacity appr.		liters (US gals.)	5.5 (1.5)					
Fluid grade			ATF (Automatic Transmission Fluid)					

General remarks

- The transmission is equipped with immersion and circulation lubrication.
- An oil cooler must be provided for operating the transmission.
- The inclination of the input shaft should not exceed an angle of 12° for continuous operation.
- Transmissions may be operated with an idling propeller shaft with multi-engine installations, or when the boat is in tow or sailing.
- There are measuring points for monitoring the shifting pressure and fluid temperature. For location and size of the thread refer to "Main dimensions", items e) and i).

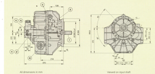
Main dimensions

Attention: For installation, operation and maintenance please note the remarks in the specific Manuals.



Direction of rotation, output side, lever set to
A – right hand propeller **B** – left hand propeller

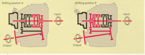
a) Shift lever dia. 6.4$^{+0.2}$ **b)** Transmission breather **c)** 4 threads each, M 12/25 deep, for suspension of transmission **d)** Space required for removing dipstick 200 mm **e)** Measurement connection for shifting pressure M 10×1; 22^{+2} bar **f)** Space required for removing fluid filter, 90 mm **g)** 2 threads M8×21 deep for cooler mounting **h)** Neutral switch for electric signal **i)** Connecting thread 3/8" – 18 NPSF for temperature probe 13 deep **k)** Mounting thread M8 for counter support (switching cable) **l)** SAE z=26; DP 20/40; 30°; Flat Root; Class 96 **m)** Fluid filling and suction **n)** Connections from and to fluid cooler 3/8" – 18 NPSF/14 deep **o)** Dipstick **p)** From cooler **q)** To cooler **r)** Direction of input drive

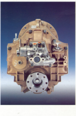


All dimensions in mm

Viewed on input shaft

HSW 800 A2 Marine transmission, schematic diagram





Special features	• Advantages
Aluminum housing	• Low weight
Down-angle drive	• Horizontal engine mounting for minimum space requirement
Case-hardened super-finished helical gears	• High efficiency, low noise
Full power transfer and same transmission ratios in both shifting positions	• Same transmissions in twin installations
Compact design	• Little mounting space required
Fine mesh filter in suction line	• High operating safety
Unified connections for input and output	• Easy exchange

The HSW 800 A2 in twin installations:
In many vessels, twin installations are used requiring counter-rotating propellers.
Frequently, engines and transmissions of different types are used in these cases.
The HSW 800 A2 transfers the full engine output,in both directions of rotation of propellers. Twin installations can thus be equipped with identical engines and transmissions.
The direction of propeller rotation is only selected in "A" and "B" shifting positions.

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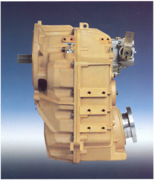
HURTH MARINE GEAR

HSW 800 V1 Marine Transmission



HSW 800V1:
Designed and engineered for many different types of boats
The HSW 800V1 is mainly used in boats with planing and semi-displacement hulls, such as pleasure and sports boats, taxi boats, search boats, as well as police and pilot vessels.

Compact design to increase the boat's useful area
As commonly known, it would be desirable for many vessels to have a larger useful area. The specific V arrangement of our transmission permits to install the motor far in the stern and to pass the propeller shaft under the drive unit.

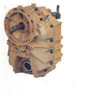
Along with the compact and space-saving design of the HSW 800V1, additional room is thus obtained for the cabin or loading area.

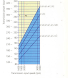
High gear train efficiency thanks to tapered helical gears
The transmission is characterized by its output shaft designed as a quill shaft and inclined through 12°.
The angle of inclination is obtained by a tapered helical gearing developed by HURTH. All gears are helical, case hardened and super-finished, to ensure quiet operation and an excellent engine load factor.

Easy and reliable, hydraulically operated shifting
The HSW 800V1 is easily and reliably actuated via the hydraulically operated multiple disc clutch. Shifting is started by actuating the shift lever.

An integrated gear pump provides a hydraulic fluid and lubrication oil flow, while a fine mesh filter installed in the suction line assures a long service life and high dependability in operation.

A safety neutral switch to be connected to the starter assures that the engine can only be started in the "0" position (with the propeller shaft disengaged).





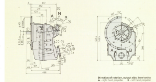
Technical data		HSW 800 V 1	1.2	1.4	1.6	2.0	2.5
Shifting position "A"		ratio	1.21:1	1.40:1	1.64:1	2.01:1	2.49:1
Shifting position "B"		ratio	1.20:1	1.39:1	1.64:1	2.00:1	2.47:1
Power input max.	Pleasure Craft (PC) Intermediate Duty (MD) Continuous Duty (CC)	kW (BHP) kW (BHP) kW (BHP)	302 (411) 227 (308) 188 (256)	302 (411) 227 (308) 188 (256)	302 (411) 227 (308) 188 (256)	302 (411) 227 (308) 188 (256)	271 (369) 227 (308) 188 (256)
Input torque max.	Pleasure Craft (PC) Intermediate Duty (MD) Continuous Duty (CC)	Nm (lbft) Nm (lbft) Nm (lbft)	900 (664) 678 (500) 566 (417)	900 (664) 678 (500) 566 (417)	900 (664) 678 (500) 566 (417)	900 (664) 678 (500) 566 (417)	809 (596) 678 (500) 566 (417)
Input speed max.		rpm	3200				
Weight without fluid appr.		kg (lb)	93 (205)				
Fluid capacity appr.		liters (US gals.)	7.0 (1.85)				
Fluid grade			ATF (Automatic Transmission Fluid)				

General remarks

- The transmission is equipped with immersion and circulation lubrication.
- An oil-cooler must be provided for operating the transmission.
- For location and size of a thread for a temperature probe refer to "Main dimensions", item i).
- The inclination of the input shaft should not exceed an angle of 12° for continuous operation.
- The transmission may be operated with an idling propeller shaft with multi-engine installations, or when the boat is in tow.

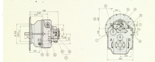
Main dimensions

Attention: For installation, operation and maintenance please note the remarks in the specific Manuals.



Direction of rotation, output side, lever set to
A – right hand propeller **B** – left hand propeller

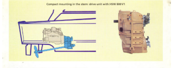
a) Shift lever dia. 6.4 + 0.2 mm; **b)** Transmission breather; **c)** 6 threads M12, 23 deep, for suspension of transmission; **d)** Space required for removing dipstick; **e)** Measurement connection for shifting pressure M10x1; **f)** Space required for removing fluid filter; **g)** 2 threads M8x21 deep for cooler mounting; **h)** Neutral switch for electric signal; **i)** Connecting thread 3/8" NPSF for temperature probe; **k)** Mounting thread M8 for control cable bracket; **l)** SAE z = 26; DP 20/40, 30° Flat Root, Class 1B; **m)** Fluid filter; **n)** Connections from and to fluid cooler 3/8" – 18 NPSF, 14 deep; **o)** Fluid dipstick; **p)** From cooler; **q)** To cooler; **r)** Direction of input rotation; **s)** Shaft diameter max. 58 mm; **t)** Full profile length 60 mm



All dimensions in mm

Viewed on output shaft

Compact mounting in the stern: drive unit with HSW 800 V1



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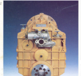

Special features	• Advantages
Aluminum housing	• Low weight
V-type output	• Compact engine mounting in the stern
Case-hardened super-finished helical gears	• High efficiency, low noise
Full power transfer and same transmission ratios in both shifting positions	• Same transmissions in twin installations
Compact design	• Little mounting space required
Fine mesh filter in suction line	• High operating safety
Unified connections for input and output	• Easy exchange

The HSW 800 V1 in twin installations:
In many vessels, twin installations are used requiring counter-rotating propellers.
Frequently, engines and transmissions of different types are used in these cases.
The HSW 800 V1 transfers the full engine output in both directions of rotation of propellers. Twin installations can thus be equipped with identical engines and identical transmissions. The direction of propeller rotation is only selected in "A" and "B" shifting positions.

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