



Operation Instructions

Single Sluice Gate Drive

Type	1211/1212.1	1213.6
	1211/1212.2	1213.10
	1211/1212.3	1214.2,5
	1211/1212.6	1214.5
	1213.4	1214.10

Double Sluice Gate Drive

Type	1280/1281.1,5	1285.12
	1280/1281.3	1285.20
	1280/1281.5	1290.5
	1280/1281.10	1290.10
	1285.8	1290.20

Tandem Sluice Gate Drive

Typ	1285.40	1290.40
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1. Safety instructions

Where to use:

This gate drive may only be used in accordance with the following instructions.

- To be used only if in perfect technical condition.
- To be used by trained personnel only.
- To be used only for its intended purpose (pull or pressure).

Safe working practices

Read these operating instructions carefully before using the gate drive.

Work safely and be aware of dangers at all times.

Inform your supervisor immediately of any damage or faults to the gate drive. Do not operate the gate drive again until the damage or fault has been repaired.

Do not

- Exceed the maximum load (see tech. data and type/capacity n°plate).
- Transport people.
- Work below or on the tilted load.
- Electric operation without end stop limit switch and overload protection.

Use exclusions

- Not to be used continuously.
- Not suitable for use in explosive environment.

Organisational measures

- Be sure that these operating instructions are always at hand.
- Do not allow this gate drive to be operated by untrained staff.
- Check regularly that the unit is operated safely and according to these instructions.

Assembly, maintenance and repair

Mounting, service and repair only by skilled personal.

Use only original manufacturer's replacement parts.

No changes or modifications may be carried out on parts relevant to safety.

Additional equipment must not infringe on safety.

Important!



Should the sluice gate drive not have any locking device, the sluice gate must be secured against sinking before taking off the drive unit or the connection shaft.

Additional instructions to be adhered to

- Safety and accident prevention regulations.
- National regulations, safety standards and guidelines.

2. General

Sluice gate drives are used on river courses, on sluices and on power stations for the regulation of the water levels and for the control of turbine outputs, for locking the ships, for draining and rinsing the storage lakes as well as for regulating the irrigation systems.

These high quality gate drives of the Types 1211 / 1212 / 1213 / 1214 (single sluice gate drive) or 1280 / 1281 / 1285 / 1290 (double sluice gate drive) have been proven for decades to be robust and reliable.

The standard versions meet the pull-force range = 5-400 kN and are manufactured with numerous drive versions, both manual type and electric type.

All sluice gate drives comply with the rules for preventing accidents of the German ordinance BGV D8 3 Hoists, Lifting Devices and Pulling Devices³.

3. Construction

3.1 Types 1211/1212 and 1280/1281

- Housing of pressed steel sheet;
- toothed rack of hardened steel and of tempering steel as solid material with milled teeth;
- spur gears of high-quality hardened steel or of high-quality tempering steel;
- safety crank (SIKU) with integrated automatic mechanical brake prevents dropping of shutter;
- safety spring crank (SIFEKU) with integrated automatic mechanical brake, which works both in pulling direction and in pushing direction;
- automatic mechanical brake between electric drive and sluice drive.

3.2 Types 1213 and 1285

- Housing of pressed and welded steel sheet;
- toothed rack of hardened steel and of tempering steel, rectangular solid material with milled teeth;
- spur gears of high-quality hardened steel or of high-quality tempering steel; bearings = boxed - automatic mechanical brake in the housing.

3.3 Types 1214 and 1290

- Housing of cast steel and of special section tube;
- toothed rack of rectangular pipe with set-on toothed rack of tempering steel;
- spur gears of high-quality hardened steel or of high-quality tempering steel; bearings = boxed - automatic mechanical brake in the housing.

4. Operation

4.1 Crank handle – Side drive

- fixed-mounted-on crank (standard);
- dismountable crank with crank radius adjustment (option).

Move the crank handle by 90° into operating position. A clockwise rotating of crank will lift the load; a counterclockwise of crank will lower the load. (On some versions the rotating sense will be opposite). The locking bolt being pushed in, slide the dismountable crank up to the stop on the drive square. After having released the locking bolt the crank becomes locked.

After having released the T-screw adjust the crank radius to the desired radius and fix accordingly.

4.2 Mitre gear with crank handle

The mitre gear permits operating the sluice gate drive across the standard crank position, laterally or centrally to the sluice gate drive. The demultiplication reduces the crank force by approx. 1/3. All crank versions of § 4.1 can be used.

In the case of the types 1211/1212 and 1280/1281 the SIKU or the SIFEKU is mounted on the mitre gear.

4.3 Electric drive unit – 205712 – Type 1290.10.70.00

– Safety torque cutoff via spring rocker; emergency manual actuating via motor shaft.

The operating of the sluice gate drives with drive unit takes place via control elements within the switch box. Prior to the operating release adjust the limit switches OPEN and CLOSED and create the correct circuitry (see Adjustment Instructions enclosed with the delivery).

The limits of travel „up“ and „down“ have to be controlled by end switches. An end switch for the lifting limit can be supplied optionally or has to be installed by the operator.

To protect against the danger of overload, end switches are present both in the “lift” and the “drop” directions. In addition there is an end switch to interrupt the power circuit during manual operation. The end switch must be connected only by professional installers and the function of the unit must be inspected before it is placed in operation. (Connection diagram, see general arrangement drawing).

The overload safety feature which is set by the manufacturer at 80 Nm and secures the connected winches and the drive unit against overload.



Any bypassing of the limit switch function or of the safety switch function, e.g. by means of manual sluice gate change-over is forbidden!

The factory-made adjustment can be altered as follows:

- The increasing of the spacing between switch and control cam via the switch basic plate causes an increase of the cutoff torque for both the rotation senses.
- The increasing of the spacing between switch and control cam on the respective switch causes an increase of the cutoff torque of the related rotation sense.
- The alteration of the pre-tension on the respective spring affects the related rotation sense.

After any alteration and after having dismantled the junction shaft, determine the current switching point with the help of a dynamometric key and document this switching point accordingly.



When adjustment changes are made, the value specified in the Technical Data under input Mt must be adhered to.



In case of sluice gate drives without automatic mechanical brake, always comply with the Notices for securing the shutter!

If in an emergency the unit must be manually operated, proceed as follows:

Manual drive by plugging the crank into the seat of the motor shaft (e.g. in case of power outage or during set-up operation).

4.4 Electric drive of type Auma SA 07.5, SA 10.1 or type SA 14.1 or similar drives

Adjustment, operating and maintenance, see Operating Instructions Auma.

4.5 Electric drive unit – 210350 –

- Safety torque cutoff via current-limiting relays; emergency re-adjustment by changing over to crank operating.

The operating of the sluice gate drives with drive unit takes place via control elements within the switch box. Prior to the operating release adjust the limit switches OPEN and CLOSED and create the correct circuitry (see Adjustment Instructions enclosed with the delivery).

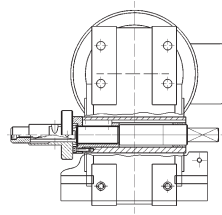
Current-limiting relays are here built-in as overload protection. The factory-mode adjustment for current threshold and hiding time are indicated in Technical Data, where are also included the maximum permissible values.



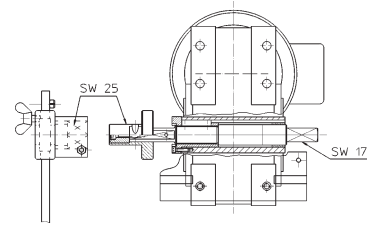
Any alteration of adjusted values on the front face of the respective appliance must be documented!

In case of emergency manual operating proceed as follows:

- shift the coupler,
- plug on the crank,
- rotate the crank and displace the sluice gate drive into the desired position,
- prior to changing over to motor operating dismount the crank and re-shift the coupler into its initial position.



Motor operating



Emergency manual operating

Notice:



If the coupler cannot be shifted, loosen with the help of a 6 mm wrench applied on motor fan impeller. For this, secure the motor against starting.

4.6 Electric drive unit – 210444 –

- Safety torque cutoff via current-limiting relays; emergency re-adjustment by actuating the brake lever and rotating the motor shaft.

Operating via control elements in the switch box. The function of the current-limiting relays is described in 4.5. Emergency re-adjustment only via brake lifter lever with opened motor brake.

5. Maintenance

The gate drive should be checked regularly by trained personnel depending on usage and conditions, but at least once a year. (Annual operating safety inspection as per German BGV D8, "23, Par. 2 safety regulations).

Trained personnel are people who by virtue of training and experience have gained sufficient knowledge in the field of gate drives, lifting and pulling equipment, and who are adequately acquainted with national standards of accident prevention and safety regulations and familiar with generally accepted rules of engineering (such as DIN-EN standards) such that they can judge the condition of gate drives, lifting and pulling equipment where working safety is concerned.

Every gate drive has cylindrical lubricating nipples on its housing plate or at its bearing points by way of which the winches can be lubricated as required, in any case at least once a year. Recommended lubricant Rhenus Norlit LZK 3 or similar quality (range of application -25°... +100°C). The toothed racks should also be cleaned as necessary, but in any case at least once a year, and then greased with the same lubricant.

During normal use (approx. 50 movements annually) the gearbox should be opened every five years, cleaned, and new grease applied. Any possibly strongly soiled parts should be replaced. During frequent use (such as daily), this maintenance is required every two years.

Safety crank

If the crank offers resistance when lowering a load, apply a few drops of oil into the recesses on the crank hub. Grease all moving parts on the crank handle if necessary.

The replacement of worn friction discs (aperture $> 30^\circ$) and repair of faulty cranks may only be carried out by the manufacturer.

Safety spring catch

Within the framework of the annual operating safety checks always carry out a functional test.

Check of the no-load torque:

> 8 Nm re-lubricate the brake or eliminate the restraint;

< 4 Nm the wear limit has been reached, replace the wearing parts; any broken brake spring must be replaced immediately!



Dismounting of safety crank and of safety spring catch with load-free sluice gate drive only!

Mitre gear and drive unit

The mitre gear is also provided with a cylindrical lubrication nipple by way of which the bearing points can be lubricated. Maintenance schedule: depending on use, but at least once a year.

The worm gearing of the drive unit is lubricated for its lifetime, so it requires no maintenance.

Follow these instructions and you, too, will continue to be pleased with your haacon gate drive.

On all drive units with safety torque cutoff via limit switch, determine the actual switching point existing at the moment of the annual operating safety check (with the help of a dynamometric key). In case of deviations from the rated-value indicated in the data sheet, re-adjust accordingly. The adjustment of the current-limiting relay must coincide with the values indicated in the data sheet.

6. Technical data

(See attached technical drawings)

7. Spare parts

(See attached technical drawings)

E.C. Manufacturers Declaration to 98/37/EEC IIB

haacon hebetechnik gmbh
Josef-Haamann-Straße 6
D-97896 Freudenberg/Main



Name and address: haacon hebetechnik gmbh Telefon: 09375/84-0
Josef-Haamann-Straße 6 Telefax: 09375/8466
97896 Freudenberg/Main

Description:

Designation:	Single Sluice Gate Drive	Double Sluice Gate Drive
Type:	1211, 1212	1280, 1281
Capacities	1 – 2 – 3 – 6 t	1,5 – 3 – 5 – 10 t

Relevant E.C. Directives:

98/37/EEC	EC-machinery directive
91/368/EEC	EC-machinery directive
93/44/EEC	EC-machinery directive
93/68/EEC	EC-machinery directive
73/23/EEC	EC- Low – voltage directives

Harmonised standards:

DIN EN ISO 12100 safety of machines

National standards and technical specifications:

BGV A1 Unfallverhütungsvorschriften (Allgemeine Vorschriften)
BGV D8 Unfallverhütungsvorschriften (Winden, Hub-Zuggeräte)
DIN 7355 Stahlwinden
DIN/VDE 0530 Teil 1 umlaufende, elektrische Maschinen
DIN/VDE 0660 Teil 2 Niederspannungsgeräte, Steuergeräte und Schaltelemente
DIN/VDE 0470 Schutzarten IP

This product must not be used until it is established that the equipment of which it forms part complies with the guidelines of the EC Directive 98/37/EEC IIB.

Signed:

Freudenberg, 19.12.2005

ppa. Michael Grän

i. V. Konrad Lazarus

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Description:

Designation:	Single Sluice Gate Drive	Double Sluice Gate Drive	Tandem Sluice Gate Drive
Type:	1213, 1213 M	1285 S, 1285 W, 1285 M	1285 M
Capacities	4 – 6 – 10 t	8 – 12 – 20 t	– 40 t

Relevant E.C. Directives:

98/37/EEC	EC-machinery directive
91/368/EEC	EC-machinery directive
93/44/EEC	EC-machinery directive
93/68/EEC	EC-machinery directive
73/23/EEC	EC- Low – voltage directives

Harmonised standards:

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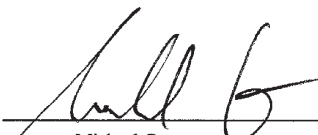
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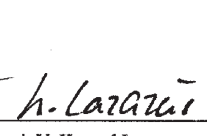
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DIN/VDE 0470 Schutzarten IP

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Signed:

Freudenberg, 22.06.04


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E.C. Manufacturers Declaration to 98/37/EEC IIB

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Description:

Designation:	Single Sluice Gate Drive	Double Sluice Gate Drive	Tandem Sluice Gate Drive
Type:	1214, 1214 M	6127	1290 S, 1290 W, 1290 M
Capacities	2,5 – 5 – 10 t	1 t	5 – 10 – 20 t

Relevant E.C. Directives:

- 98/37/EEC EC-machinery directive
- 91/368/EEC EC-machinery directive
- 93/44/EEC EC-machinery directive
- 93/68/EEC EC-machinery directive
- 73/23/EEC EC- Low – voltage directives

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- DIN/VDE 0470 Schutzarten IP

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Signed:

Freudenberg , 22.06.04

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