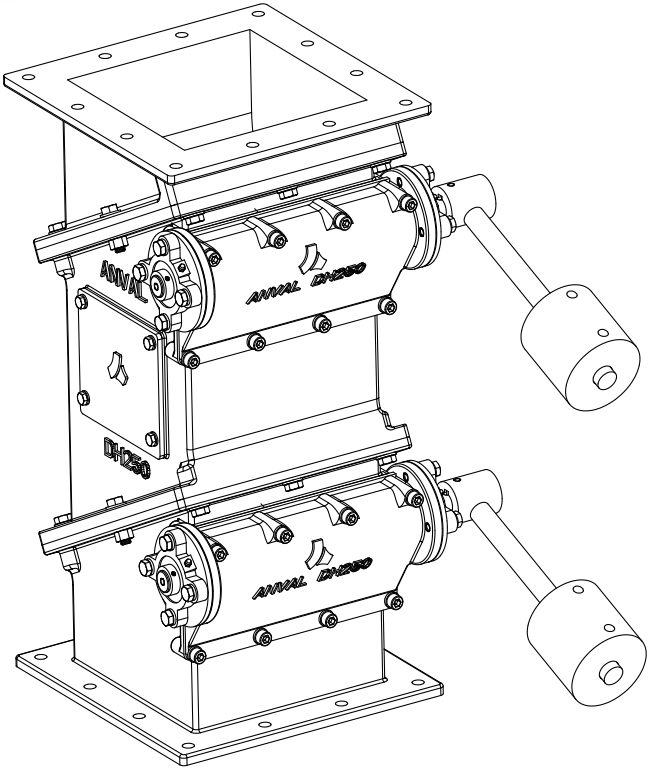
DHSERIES

Dump Valve

Installation, Safety, Operation & Maintenance Manual



CE

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ISO 9001:2015 Reg. No.748699

This manual contains data with respect to our default products only. For any deviation from the default models, kindly refer the deviation sheet in the last page of the manual.

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General Information

Purpose of the Manual

This manual has been compiled to provide information on the safety, transport, handling, installation, maintenance, repair, disassembly and dismantling of the DH Series valve.

Apart from adhering to established engineering practices, the information given in this manual must be carefully read and applied rigorously.

Failure to adhere to the information provided herein may result in risk to personal health and safety, and economic damages.

This information, provided in the original language (English) of the Manufacturer, may be made available in other languages to meet legal and/or commercial requirements.

The documentation must be stored by a person with the correct authority and must always be made available for consultation. In case of loss or damage, replacement documentation must be requested directly from the Manufacturer. This manual reflects the engineering standards applied to the valve at the time of commercialization.

The Manufacturer reserves the right to modify, supplement and improve the manual, without the present publication being, for that reason, considered inadequate.

Significant sections of the manual and important specifications are highlighted by symbols whose meanings are given on the following page.

Symbols

The operations highlighted by these symbols must be carried out by qualified professionals specially trained in the Health and safety requirement.

Failure to observe these instructions may result in serious risks to personal and environmental safety.

This symbol indicates situations of serious danger which, if ignored, may result in serious risks to the health and safety of personnel.

This symbol indicates the need to adopt specific precautions to avoid risks to the health and safety of personnel and possible economic damages.

This symbol indicates important technical information.

Safety Information

Safety Standards

Carefully read the instructions given in this manual, especially those regarding safety.

Persons charged with working on the equipment at any time in its service life must be trained specifically for the purpose with special abilities & experience in this area as well as being equipped with the appropriate tools & individual safety equipment. Failure to meet these requirements constitutes a risk to personal health & safety. Use the equipment for the applications envisaged by the manufacturer. Improper use can result in risks to personal health, safety & economic damage

The applications defined by the manufacturer are those industrial applications for which the equipment has been developed.

Keep the equipment at its maximum efficiency by following the routine maintenance schedule. This enables the unit to operate at maximum performance over a long service life in compliance with safely regulations.

When working on the equipment in areas that are difficult to access or hazardous, ensure that adequate safety precautions are taken for the operator & others in compliance with the provisions of law on health & safety at work

All maintenance, inspection & repairs must only be done by an expert maintenance technician. It is therefore, essential to implement operating procedures which address potential hazards & their prevention for the entire equipment. The expert maintenance technician must always work with extreme caution in full compliance with applicable safety standards.

During operation wear only the apparel & safety equipment indicated in the user instructions provided by the manufacturer or laid down by applicable laws on safety at work.

Replace worn components with original spare parts. Use the lubricants (Oil & grease) recommended by the manufacturer.

Do not dump polluting materials into the environment. Dispose of all such materials as stipulated by applicable legislation. After replacing lubricants clean the gear unit's surfaces & the walk-on surfaces around the work area.

Conformity to standards

All DH Series valves are CE marked and designed in compliance with the provisions of all applicable Essential Health & Safety Requirements, "Machinery Directive 2006/42/EC" and, if requested, can be supplied complete with manufacturer's declaration

Operating Limits & Conditions

Ambient Conditions:

Ambient temperature: Min-0°; Max-60°

Usage of the equipment in the temperature outside the ambient range has to be discussed with the manufacturer.

Do not use the equipment, if not explicitly intended for the purpose, in a potentially explosive atmosphere or where the use of explosion-proof equipment is specified.

If the equipment is to be serviced in a poorly lit area, use additional lamps & ensure that the work is done in compliance with appliance with applicable safety legislation.

Noise - Vibration

The equipment operates well below 80db in normal condition with minimal vibration. Specific noise tests can be conducted at the time of purchase by the manufacturer upon request.

Safety Instructions

Special Conditions for Safe Use

The following points must be considered while using the valve in potentially explosive atmosphere.

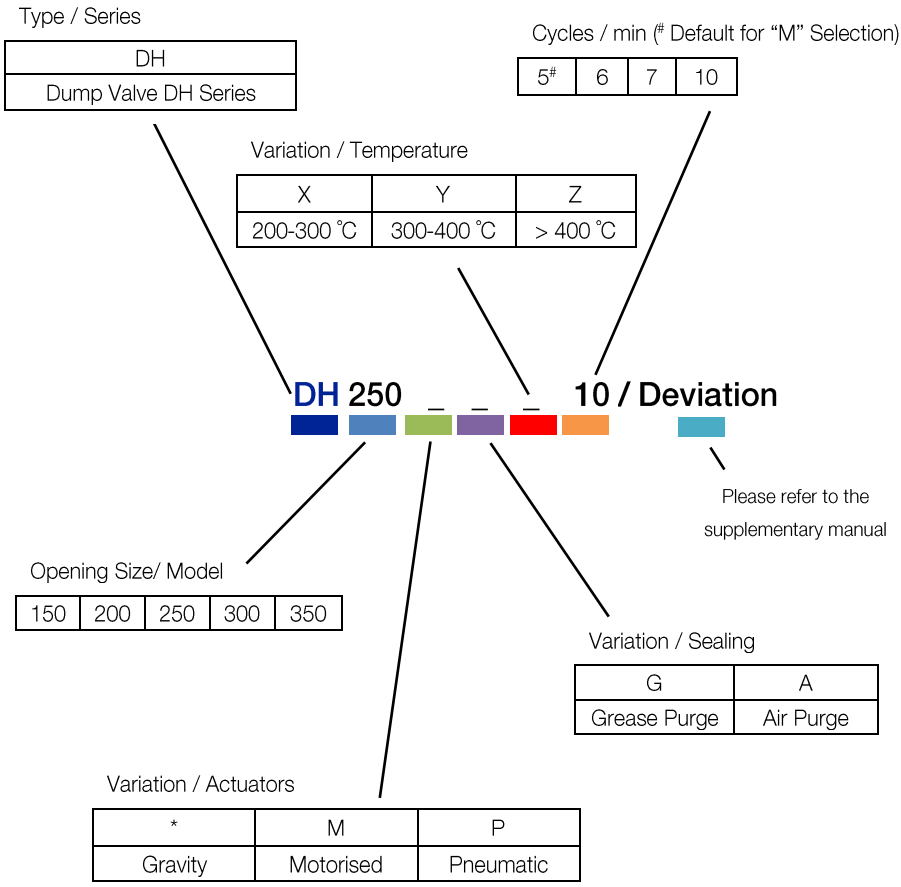
- All relevant metallic parts of the equipment shall be bonded to a fixed and secure platform.
- The equipment shall be installed such that the final installation provides protection from parts of the body coming into contact with the moving parts of the valve.
- The equipment shall be installed such that the final installation prevents the entry of falling objects into the equipment.
- The equipment shall be cleaned at regular intervals to prevent a build-up of dust on any part of the apparatus.

Maximum Cycles/Min of the dump valve should never exceed the criteria given below.

MODEL	MAX. CYCLES / MIN
DH150	10
DH200	10
DH250	10
DH300	10
DH350	10

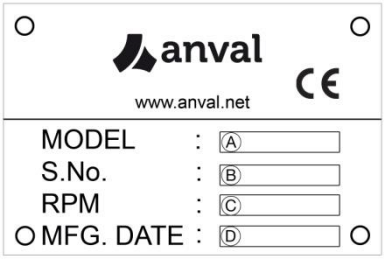
Model Identification

Below table represents codification format for the choosing the model code:



*Default Selection

Equipment Identification



A – Model details of the Valve

B – Unique reference code

C – Gearbox Output RPM

D – Month &Year of Manufacturing

The nameplate and the information thereon must be readable at all times and consequently cleaned from time to time. Should the nameplate wear and/or become damaged so as to affect its readability or that of even one of the items of information thereon, the user must request a new nameplate from the Manufacturer, and replace the old one.

Requesting technical assistance

For any technical service needs, contact the Manufacturer's sales network, quoting the information on the unit's nameplate, the approximate hours of service and the type of defect.

Manufacturer's liability

The Manufacturer declines all liability for cases of:

- Use of the valve in violation of local laws on safety and accident prevention at work.
- Incorrect installation, disregard or incorrect application of the instructions provided in this manual.
- Incorrect or defective power supply
- Modifications or tampering.
- Work done on the unit by unqualified or unsuitable persons.

The safety of the valve also depends on scrupulous observance of the instructions given in this manual, in particular:

- Always operate the valve within its operating limits.
- Diligently observe the routine maintenance schedule.
- Only authorize trained operators to inspect and service the unit.
- Use only original spare parts
- Do not attempt to use the valve contrary to the instructions supplied.
- The instructions given in this manual do not substitute but summarize the provisions of applicable safety legislation.

Handling & Transport

Packaging

The standard packaging, when supplied & unless otherwise agreed, is not proofed against rainfall. For environments which are under cover & not humid. Storage in all other conditions requires specific packaging.

The most frequent type of packaging is shown below

Symbol	Description
	This way up
	Do not clamp
	Do not use hooks
	Do not stack
	Keep away from water
	Fragile
	Handle with Care
	Recycle

On the receipt of the equipment, check that the delivery item corresponds to the purchase order & that it is not damaged or faulty in anyway. Refer any nonconformity to the manufacturer at info@anval.net

Dispose of packaging materials as laid down by the provisions of law

Packing Dimension Details

MODEL	VALVE TYPE	PACKING MATERIAL	L X B X H	GROSS WEIGHT
DH150	Gravity	Wooden Box	420 x 600 x 560	57
DH150	Pneumatic	Wooden Box	450 x 560 x 560	60
DH150	Motorised	Wooden Box	722 x 740 x 560	85
DH200	Gravity	Wooden Box	494 x 670 x 670	80
DH200	Pneumatic	Wooden Box	487 x 547 x 670	83
DH200	Motorised	Wooden Box	787 x 758 x 670	110
DH250	Gravity	Wooden Box	570 x 765 x 810	120
DH250	Pneumatic	Wooden Box	554 x 556 x 810	120
DH250	Motorised	Wooden Box	853 x 772 x 810	160
DH300	Gravity	Wooden Box	665 x 920 x 900	165
DH300	Pneumatic	Wooden Box	661 x 623 x 900	170
DH300	Motorised	Wooden Box	949 x 902 x 900	225
DH350	Gravity	Wooden Box	920 x 970 x 1030	235
DH350	Pneumatic	Wooden Box	719 x 655 x 1030	235
DH350	Motorised	Wooden Box	1019 x952 x 1030	270

All dimensions in mm, weight in Kgs.

Note: Approximate dimension only. Varies with motor size and gear box variation. L x B x H denotes the Length, Breadth and Height of the package box.

Handling Instructions

Handle packages as per the manufacturer's instructions & those marked on the packages themselves. Since the weight & shape of packages may make manual handling unfeasible, special equipment must be used to avoid damage & injury.

The person authorised to handle the product must take all necessary precautions to safeguard their safety & that of all other persons involved.

Moving Packages

Prepare a suitable, delimited area with a level floor or surface for unloading the packages. Prepare the equipment required for handling the package. The lifting & handling equipment used (e.g. crane or lift truck) must have adequate capacity for the weight & size of the load, taking into account its attachment points & centre of gravity. If required, this information is indicated on the package itself. Bind heavy packages with chains, belts & steel ropes after checking whether they are capable of sustaining the weight of the load, which is generally specified.

Moving the equipment

All the following operations must be done with due care & caution without sudden movements

- Identify the attachment points for lifting the equipment.
- Prepare the gear unit for lifting by attaching straps, hooks, shackles etc.., to its attachment points, or alternatively, use a pallet for moving the load. If using a crane, first lift it out of its packaging.
- If using a lift truck or pallet truck, remove the packaging & fit the truck's forks at the indicated positions
- First lift the load very slowly to check that it is stable.
- Move the equipment to the unloading area & lower it gently into position, taking care not to cause sudden oscillations while moving it.

Use the eye bolts in such a way that it manages the entire load in conjunction with centre of gravity.

Lifting

When lifting, use accessories such as eyebolts, snap hooks, screw clamps, straps, ropes, hoax etc. which are certified & adequate for the load.

The load must not be allowed to sway or oscillate by more than 15degree in any direction when being lifted. If the oscillation exceeds the limit, stop & repeat the lifting operation as instructed

Storage

- Do not store the unit in excessively humid conditions or where it is exposed to the weather (do not store outdoors)
- Do not place the equipment directly on the ground
- Place the equipment on a stable base & make sure that it is not subjected to accidental displacements
- Store the packaged equipment in accordance with the instructions on the packaging itself
- If the equipment is stored for more than 6 months, fill the gear unit with lubricating oil & cover all machined external surfaces with a quality rust proofing product)
- Safety precautions to be taken when returning the equipment to service after storage:
- The external surfaces must be thoroughly cleaned of all rust proofing products, contaminants & other impurities (use a standard commercial solvent). Do this outside any explosion hazard area.
- The solvent must not touch the seal rings as this can damage them & render them ineffective.
- If the oil or protective material used during storage is not compatible with the synthetic oil used during the machine's operation, the interior of the unit must be thoroughly cleaned before filling with the operating oil.

Installation Pre-requisites & Installation

The entire installation process must be planned based on the general design of the machine. The person authorised to do the work must, if necessary, implement a safety plan to safeguard all persons directly involved & rigorously apply all applicable legislation.

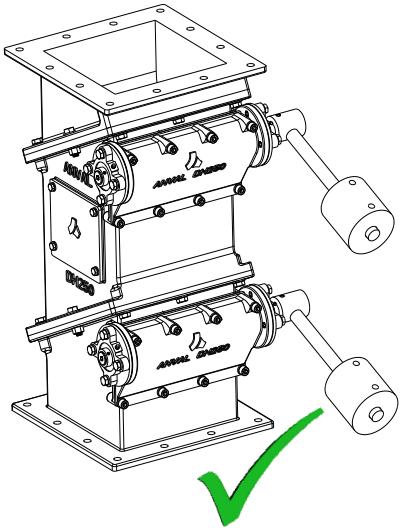
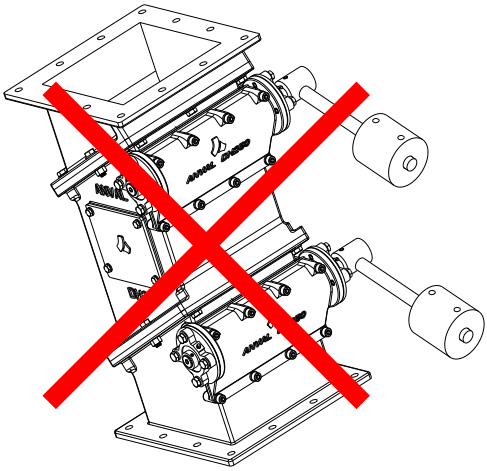
Installation Pre-requisites

- Thoroughly clean all packaging materials & protective product residue from the equipment if any.
- Check that the data on the nameplate corresponds to that which is specified on the order.
- Ensure that the structure to which the equipment is to be mounted is sufficiently robust & rigid to support its weight & operating stresses.
- Check that the machine on which the equipment is to be mounted is switched off & cannot be accidently switched on.
- If the work environment is corrosive for the equipment, take the special precautions required for aggressive environments. In this case, contact us for sales service.

Installation

- Place the equipment in the vicinity of the installation area.
- Mount the equipment & secure it to the structure at the points provided. The equipment should be secured to the structure through all the mounting points on the mount specified (flange)
- Preferred position: The valve should be installed in a vertical position and the correct way up. This is obvious by the chutes and pneumatic rams and flap action.
- Bolting: Ensure all bolting is right & valve is mounted securely to installation.
- Housekeeping: Ensure entry to valve is clean & no foreign objects are in the system that can feed into the valve.

Installation Drawing

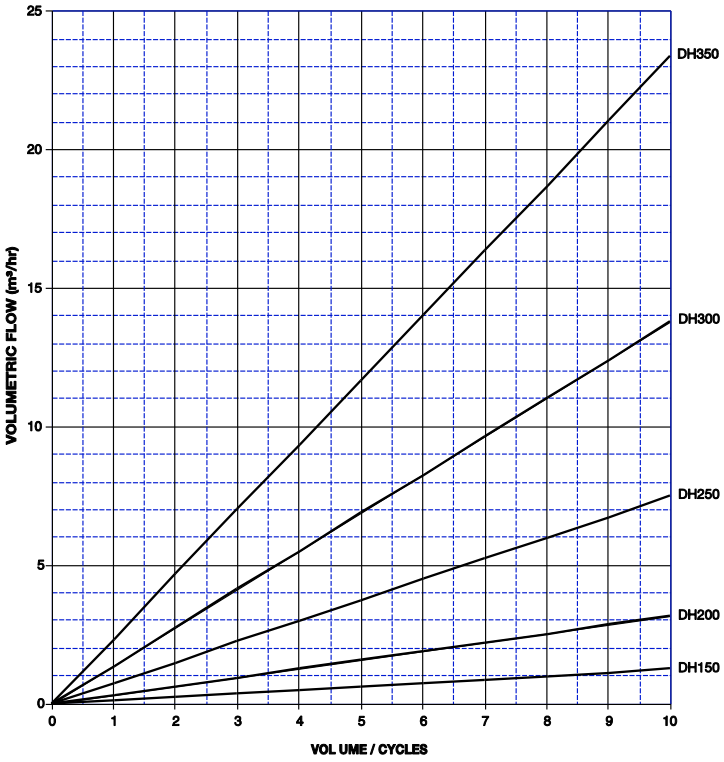
VERTICAL Preferred Mounting Position	TILTED ANTI CLOCKWISE / CLOCKWISE Not Recommended
	

Operation and Commissioning

- Cycles has been set at the factory end based on the customer's requirement
- Valve's performance depends on the performance of the system where it is installed, thus any major deviation from the defined specification will call for complete investigation.
- Within the warranty period any dismantling of valves has to be carried out under the vigilance or guidance of the company's officials.

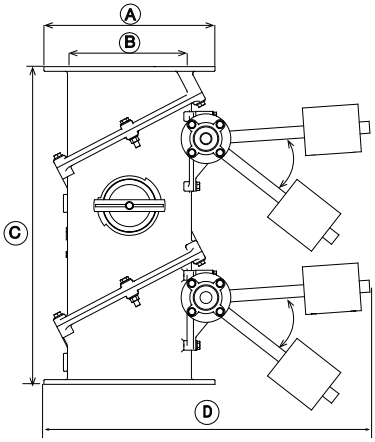
Technical Information

Capacity Data:

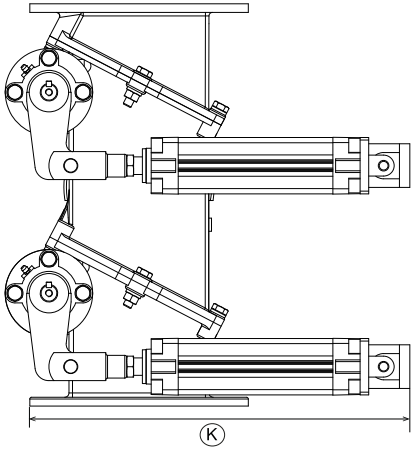


Note: This chart is prepared for guidance purpose only.

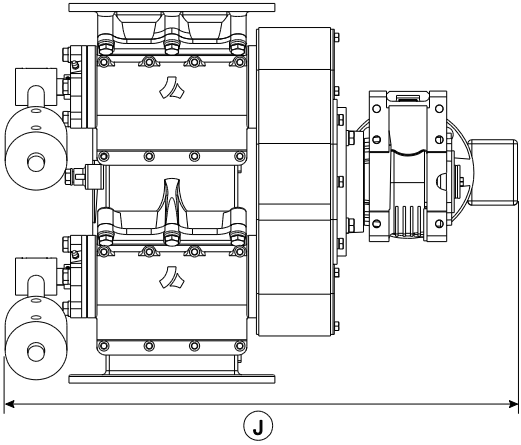
Dimension Details



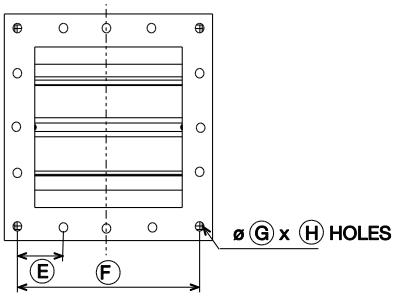
GRAVITY TYPE



PNEUMATIC TYPE



MOTORIZED TYPE



FLANGE OPENING

Dimension Table

Name	DH150	DH200	DH250	DH300	DH350
A	250	300	360	430	480
B	150	200	250	300	350
C	460	570	710	800	930
D	500	570	665	820	870
E	70	85	105	94	106
F	210	255	315	376	424
G	12	14	14	15	15
H	12	12	12	16	16
J	622	687	753	849	919
K	435	413	416	484	515
Net Weight	75	99	144	206	256
Gross Weight	85	115	160	225	280

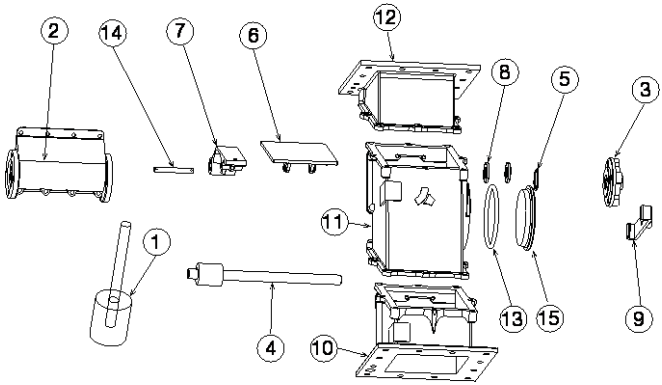
All dimensions are in mm. Weight in Kgs.

Dimension details - Length x Breadth x height

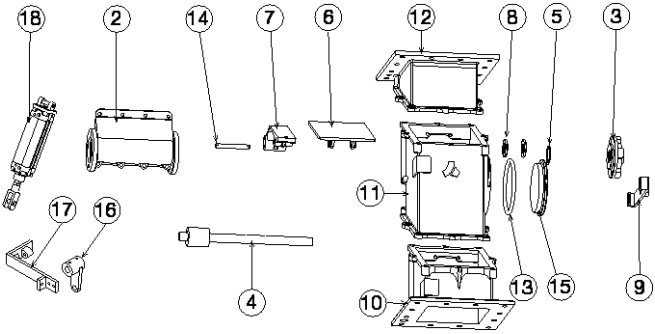
Type	DH150	DH200	DH250	DH300	DH350
Gravity	320x500x460	394x570x570	470x665x710	565x820x800	820x870x930
Pneumatic	350x460x460	387x447x570	454x456x710	561x523x800	619x555x930
Motorised	622x640x460	687x658x570	753x672x710	849x802x800	919x852x930

All dimensions are in mm. Weight in Kgs.
Indicates length x breadth x height of the valve.

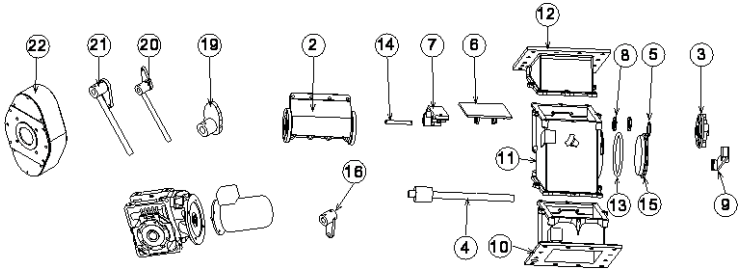
Component Information



GRAVITY TYPE DUMP VALVE



PNEUMATIC TYPE DUMP VALVE



MOTORIZED TYPE DUMP VALVE

Components Description

NAME	DESCRIPTION	DH150			DH200			DH250			DH300			DH350		
		G	P	M	G	P	M	G	P	M	G	P	M	G	P	M
1	Assembly Cantilever Arm	101-4049			101-2838			101-7095			103-3288			103-3288		
		2	0	0	2	0	0	2	0	0	2	0	0	2	0	0
2	Bearing Mount	100-8216			100-8186			100-8017			103-3011			103-3014		
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Bearing & Housing	101-3573			101-3573			100-7643			100-7156			100-7156		
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4	Shaft	102-4754			101-3584			102-5754			103-3012			103-3015		
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Circlip Internal	102-4771			100-8214			101-4962			100-8778			100-8778		
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6	Dump Flap	101-4052			101-2834			101-7076			103-3009			103-3042		
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Dump Flap Arm	101-4051			101-2835			101-7078			103-3010			103-3043		
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Labyrinth Seal	100-6825			100-6829			100-4546			100-6827			100-6827		
		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	Locking Bar	101-4060			101-4060			102-3095			102-3095			102-3095		
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Lower Body Section	102-4746			101-3564			102-4744			103-3008			103-3041		
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	Middle Body Section	102-4745			101-3557			102-4743			103-3007			103-3040		
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	Upper Body Section	101-4045			101-2831			101-7073			103-3006			103-3039		
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	O RING Ø8 X ID115 L=386	101-7092			101-7092			101-7092			101-7092			101-7092		
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	Flap Connecting Rod	101-4114			101-7083			101-7083			103-3428			103-3377		
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	Sealing Plate	101-4053			101-4053			101-4053			101-4053			101-4053		
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

NAME	DESCRIPTION	DH150			DH200			DH250			DH300			DH350		
		G	P	M	G	P	M	G	P	M	G	P	M	G	P	M
16	Assembly Pneumatic Arm	102-5565			102-1580			102-7840			103-3130			103-3424		
		0	2	0	0	2	0	0	2	0	0	2	0	0	2	0
17	Assembly Pneumatic Pivot Bracket	102-5562			102-1581			102-1622			103-3267			103-3421		
		0	2	0	0	2	0	0	2	0	0	2	0	0	2	0
18	Ram Pneumatic Cylinder *	102-5561			103-3208			103-3208			103-3488			103-3422		
		0	2	0	0	2	0	0	2	0	0	2	0	0	2	0
19	Assembly Cam	102-2304			102-2183			102-1754			103-3264			103-3378		
		0	0	1	0	0	1	0	0	1	0	0	1	0	0	1
20	Assembly Cantilever Arm – Bottom	102-2295			102-1805			102-8072			103-3265			103-3384		
		0	0	1	0	0	1	0	0	1	0	0	1	0	0	1
21	Assembly Cantilever Arm – Top	102-2294			102-1804			102-8071			103-3266			103-3385		
		0	0	1	0	0	1	0	0	1	0	0	1	0	0	1
22	Assembly Motor Mounting Bracket	102-5440			102-2191			102-8140			103-3252			103-3356		
		0	0	1	0	0	1	0	0	1	0	0	1	0	0	1

Testing & Using the Valve

The equipment has been factory tested by the manufacturer. Please contact us for further information on the same.

Before starting the equipment, check that:

- The machine incorporating the equipment complies with the provisions of the "Machinery Directive" 2006/42/EC & any other applicable safety legislation.
- The equipment's mounting position in the installation corresponds to that prescribed & indicated on the nameplate.

Before putting the equipment into service, the user must ensure that the plant in which it is installed complies with all applicable directives, especially those regarding health & safety at work

Cover the opening with a safety closure while testing the valve as per safety standard. Also ensure that the valve is never left unattended during the course of testing

Maintenance

Maintenance & replacement work must be done by expert maintenance technicians trained in the observance of applicable laws on health & safety at work & the special ambient problems attendant on the installation.

Before doing any work on the unit, the operator must first switch off the power to the equipment & ensure that it is out of service, as well as taking all necessary precautions against it being accidentally switch on again or its parts moving without warning.

Furthermore all additional environmental safety precautions must be taken (e.g. elimination of residual gas or dust, etc.)

- Before doing any maintenance work, activate all safety equipment and, if necessary, inform persons working in the vicinity. In particular, mark off the area around the unit & prevent access to any equipment which, if activated, might be the cause of unexpected health & safety hazards.
- Replace worn components with original spare parts only.
- Use the lubricants recommended by the manufacturer
- When working on the gear unit always replace gaskets & seals with new original ones
- If a gear unit bearing requires replacement, it is a good practice to also replace the other bearing supporting the same shaft.
- We recommend replacing the lubricating oil after all maintenance work.

The above instructions are aimed at ensuring efficient & safe operation of the gear unit.

The manufacturer declines all liability for injury & damage to components due the use of non-original spare-parts & non-routine work which modifies the safety requirements without prior authorisation of the manufacturer.

Do not dump polluting liquids, worn parts & maintenance waste into the environment. Dispose of all such materials as stipulated by applicable legislation.

Routine Maintenance

The following must be checked and adjusted as necessary;

- Inspect flaps for wear every quarter.
- Inspect actuators for serviceability every month.
- Grease Pivot Arm Bearings every week.
- Inspection of fasteners for every month.

If a leak is found, identify the cause of the fault, repair it & refill with lubricant before operating the equipment

Flap Inspection

The valve has to be removed from service to do the following chute/ flap adjustment

- Inspect the flaps and chutes for wear and correct action quarterly.
- The flap should not have more than 4mm roll or pitch and not more than 2mm free play on the shaft
- As the flap moves up ensure that the shaft end (back end) of the flap does not hit the inside of the chute. This will lead to premature leakage of the flap and eventually to it jamming in a partly open position. The inside and seal face of the chute should be inspected for any evidence of this type of wear.
- Corrective action is to undo the lock nut on the flap adjusting bolt. Wind the bolt clockwise so when the flap swings upwards the flap tilts slightly backwards.
- The flap should make contact with the front edge of the chute first. Once this has been achieved lock the locking nut.
- Adjust the other flap in the same manner.

Actuators Inspection

- Ensure actuator seal integrity. Check trunnion and celvis pins.

Grease Pivot Arm Bearings

- Check for bearing noises.

Lubrication

The following is a schedule of lubricants used in the DH series Dump Valve.

- Pivot Arm Bearings : High temperature lithium based Grease.

Grease lubrication

Shell Tivela S320 or Shell (Tivela Oil SC320), Kluber (Klubersynth GH 6 320), Aral (Degol GS 320), Total (Carter SY 320), IP (Telium Oil VSF 320 oAgip) & Mobil (Glygole HE320), Caltex EP320 or equivalent long-life synthetic lubricant.

Surface Cleaning

Clean all dust & process waste off the equipment. Do not use solvents or other products which are incompatible with the construction material and do not direct high-pressure jets of water at the gear unit.

If the equipment is to be painted, tape the nameplate & seal rings to prevent contact with solvent.

Adjustable counterweight

Flap units do not open until enough material has accumulated on the flap to overpower the adjustable counterweight.

- Counterweight need to be adjusted / slided on to the Cantilever arm.
- Tighten grub screw to secure counterweight position.

Counterweight position

Counterweight position can be changed in the Cantilever arm based on the bulk density of the material. It is recommended to place in the default position as specified by the manufacturer. For any technical service needs, contact the manufacturer.

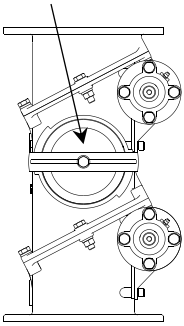
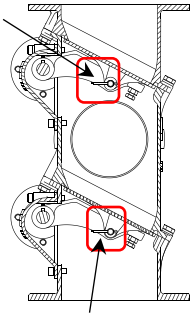
Replacing & Scrapping

Replacing Parts

- Do not hesitate to replace parts and/or components if they are not able to guarantee safe and reliable operation.
- Never improvise repairs
- The use of non-original spare parts not only voids the warranty but can compromise gear unit operation.

Flap Replacement

Flap needs to replace when the flap becomes faulty or if they are not able to guarantee safe or reliable operation. The steps for replacing the flaps are as follows.

STEP I: Remove the Inspection Cover. 	STEP II: Dismantle cylindrical pin (Refer Item 14 in page 24) by remove split pin through the inspection cover. 
STEP III: To remove the Top flap, tilt and take out the flap through the inlet opening.	STEP IV: For bottom flap, remove the cylindrical pin through the outlet opening and tilt and take out the flap.

Reverse the above procedures to replace the new flaps.

For any technical service needs, contact the Manufacturer's sales network, quoting the information on the unit's nameplate.

Spare Parts Reordering

For DH Series, following spare parts can be reordered

- SHAFT SEAL KIT – Needs 2 kit for a valve
  - Shaft seal kit includes, Labyrinth Seal, Oil Seal, and Internal Circlip
- FLAP KIT – Needs 1 kit for a Single Flap valve and 2 for Double Flap Valve
  - FLAP Kit, includes flaps, connecting rods, washer and split pins.
- BEARING KIT - For Double Dump valve needs 4 kit
  - Bearing kit includes, Bearings.
- OTHERS – Please check the part list details available in Page. Number. 24, 25 & 26.

Kindly send your requirements in email to info@anval.net for support.

NOTE: On ordering the items, please mention the valve serial number available in the product name plate.

Scrapping the equipment

- This must only be done by operators trained in the observance of applicable laws on health & safety at work.
- Dispose of all such materials as stipulated by applicable environmental protection legislation.
- Do not dump non-biodegradable products, lubricants & non-ferrous materials (rubber, PVC, resins, etc.) into the environment.

Do not attempt to re-use parts or components which appear to be in good condition after they have been checked and/or replaced by qualified personnel and declared unsuitable for use.

Troubleshooting

Below table provides information on common problems, causes & solutions of the equipment

Problem	Cause	Solution
Pneumatic Actuators stop	System air failure	Check & replace the air system
	Interlocked downstream equipment fault	Check & replace if necessary
	Power supply fault	Restore the power system
Improper closing of Flaps	Foreign or large object jammed between flap & Chute	Foreign objects needs to be removed.
Flaps stay Open/Closed	Excessive pressure downstream due to blockage or between flap arm and body	Check & make necessary changes
Excessive Valve leakage	Flaps worn	Check & replace if necessary
Seal Leakage	Seal damaged. Shaft scored	Replace seal
Abnormal Noise at Gear unit Mounting	Mounting bolts loose	Tighten down to specified torque
	Mounting bolts worn	Replace bolts
Gear unit Oil Leaks	Oil level too high	Check oil level and make necessary changes
	Casing/Coupling seals inadequate	Replace from authorised representative
	Gaskets worn	Replace from authorised representative
Gear unit doesn't run or runs with difficulty	Oil Viscosity too high	Replace oil
	Oil level too high	Check oil level for required changes
	Service load too high	Redesign drive for actual service load
Output shaft doesn't turn	Gears damaged	Replace from authorised representative
Alignment of Cam & Cam roller	Loosening of fasteners	Realign Cam and Cam roller and also check the tightness of fasteners.

Notes

Notes

Disclaimer:

All drawings are conceptual only and are subject to change without notice at the discretion; Anval Valves reserves the right to make additions, deletions and modifications to the drawings. Individual product dimensions indicated are approximate, may vary due to construction, and may vary from individual requirements indicated here within and may vary with actual construction.

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