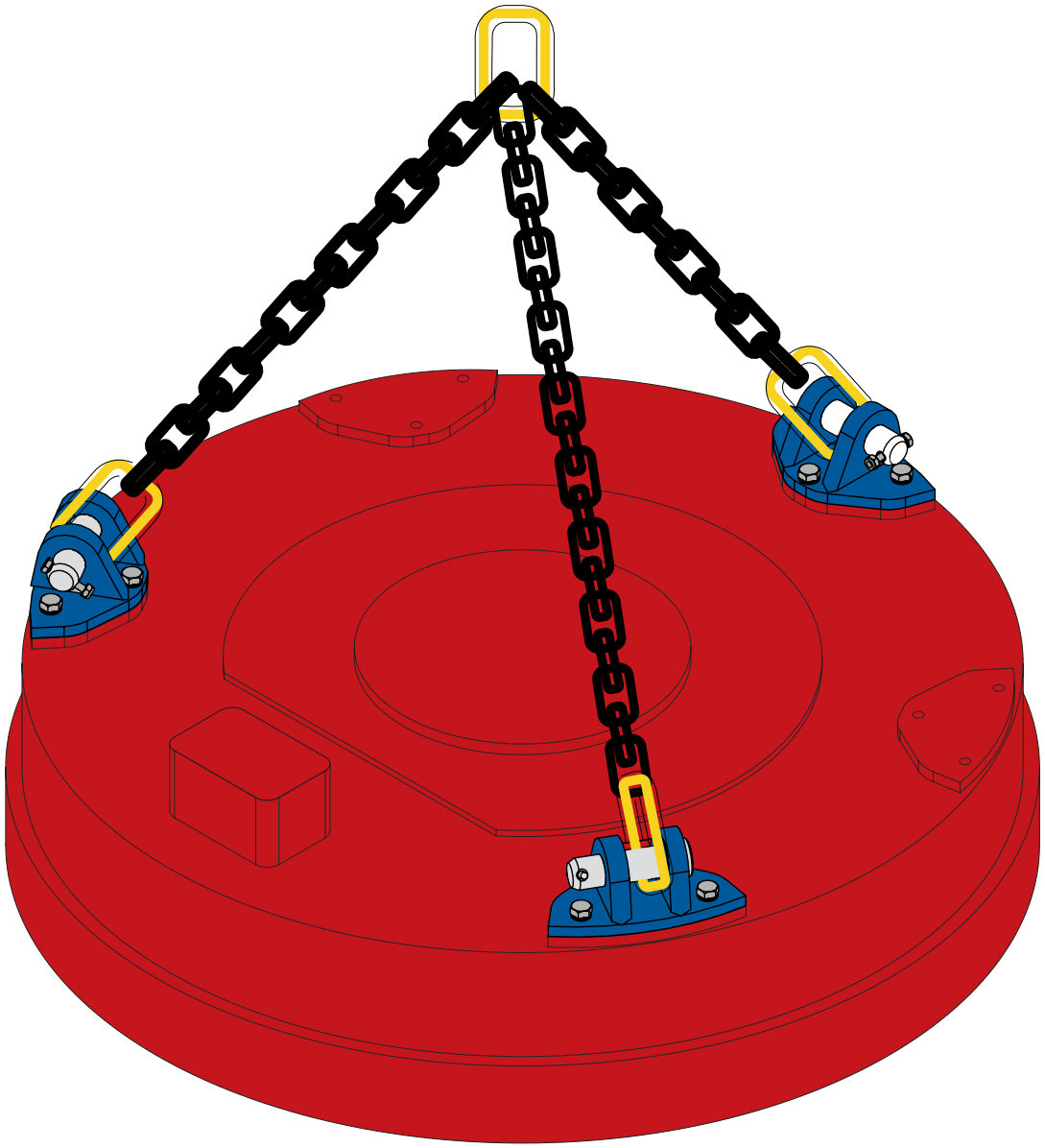
DYNASET

POWERED BY HYDRAULICS



INSTALLATION GUIDE

MAG

08/21
rev 1.0

MAG 700
MAG 900
MAG 1200

MAG 1400

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1. GENERAL

This manual contains general information about installation, operation and maintenance of the DYNASET MAG magnet.

⚠ ATTENTION!

Read this user manual before installation, use or maintenance of the MAG magnet to ensure proper handling, operation and maintenance right from the beginning. Pay attention to warnings and safety instructions. READ CHAPTER "2. SAFETY" for more information.

1.1. PRODUCT INFORMATION

The MAG is a compact attachment unit for gathering and sorting scrap and metals. The magnet is designed as an attachment for the material handling machines (hydraulic excavators, heavy trucks with hydraulic cranes etc.).

The MAG requires a 220 VDC magnet generator as a power source.

2. SAFETY

2.1. SAFETY PRECAUTIONS

⚠ ATTENTION!

Operator and maintenance personnel must act in compliance with the laws, regulations and recommendations issued by the local electricity and work safety authorities.

⚠ ATTENTION!

All installations and maintenance must be performed according to this manual. All electrical installations and maintenance that is not shown in this manual should only be performed by qualified electrician.

⚠ WARNING

RISK OF ELECTRIC SHOCK!

Risk of electric shock. Do not remove any covers when operating. All the repairs must be done by a qualified electrician.



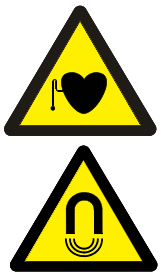
RISK OF ELECTRIC SHOCK.

Operating voltage of the MAG hydraulic magnet is 220 VDC .

⚠ WARNING

MAGNETIC FIELD INTERFERENCE

Magnetic field may interfere and damage electronics near by. Do not use near medical implants or electronics. Keep the safe distance of the base machine or at least 5m to the MAG.



The magnet produces a strong magnetic field that might interfere with electronic devices. Ensure also that the magnetic field does not interfere and damage other electrical and electronic equipment or any other sensitive equipment such as credit cards or watches.

When using the magnet, switch off and unplug all sensitive electric and electronic devices nearby. Such units are e.g. AC-chargers, electronic sensors, control and measurement instruments.

After shutting the MAG system the magnet holds magnetization before it complately discharges.

⚠ ATTENTION!

All installations and maintenance must be performed according to this manual. All electrical installations and maintenance that is not shown in this manual should only be performed by a qualified electrician.

2.2. SAFETY EQUIPMENT

When operating in the immediate vicinity of the MAG hydraulic magnet or accessories, wear the appropriate protective clothing, safety goggles, gloves and ear protection.



2.3. OPERATING SAFETY

⚠ WARNING

RISK OF BURNS!

The unit parts and oil can be hotter than 80°C!

Wear personal safety equipment!



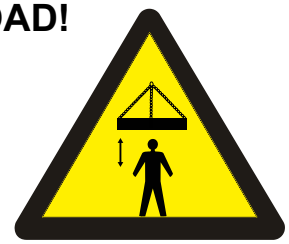
⚠ ATTENTION!

Maximum load must never be exceeded.

⚠ WARNING

DO NOT GET UNDER THE LOAD!

Danger of getting crushed. Stay clear from the magnet and the base machine's reach. Check base machine's manual for safety area details.



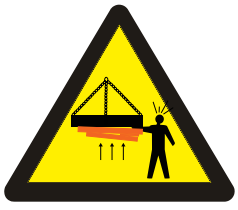
Never get under the magnet. The collected metals might drop due to a failure in the base machine or in the MAG system. Remember to keep the safe distance of the base machine and stay outside of its reach.

MAG magnet has two temperature switches that cut off the magnetization if the temperature raises too high. In this case the collected metals will eventually drop unexpectantly.

⚠ WARNING

DANGER OF GETTING CRUSHED!

Magnet will draw ferrous material around it to itself when magnetized. Do not put yourself between magnet and object that it can draw to itself. Stay clear from the magnet and the base machine's reach.



Do not lift people with the magnet.

Do not hang or grap the chains while lifting.

Do not let any person or animal get closer than 5 m when operating the magnet.

Do not drag the magnet along the ground. Dragging it might damage the magnet.

Do not release the scrap from the magnet by swinging the unit.

When picking and moving scrap, twitches, sudden moves and reversals must be avoided. Prior to starting to operate the MAG, ensure clear visibility to the magnet and its surroundings.

Do not cool the magnet with water.

Do not use the magnet under water.

2.4. MAINTENANCE SAFETY

NOTE!

Keep the components of the system clean when carrying out any maintenance to the HMAG PRO. This is to ensure safe, reliable and longlife operation of your equipment.

WARNING

RISK OF ELECTRIC SHOCK!

Wait until the charge of the electric parts is completely discharged before removing any covers.

Stop and wait at least 30 minutes for a proper discharge.



RISK OF ELECTRIC SHOCK.

Base machine has to be stopped and hydraulic circuit depressurized prior to maintenance, detaching the MAG from a base machine or disassembling the MAG.

2.5. WARNING LABELS

Warning labels are included with each main product.

Product recipient is obligated to place warning labels on the DYNASET product. Attach labels to visible and appropriate place on or close to DYNASET product where its easily seen. Clean surface with solvent detergent before attaching labels.



3. INSTALLATION

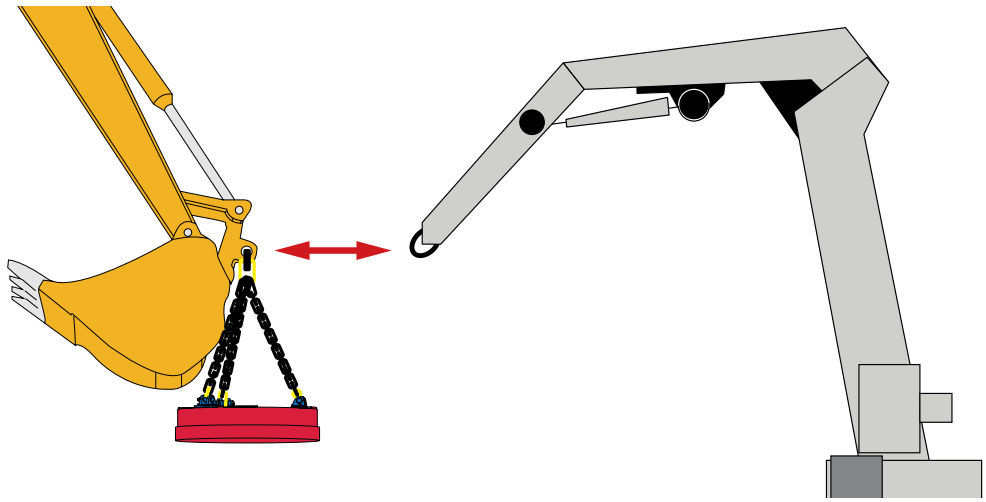
3.1. ATTACHING THE MAG TO THE BOOM

DYNASET MAG has chains as standard for the connection to the base machine's boom.

Attach the MAG hydraulic magnet to a designed lifting spot on the boom. Example of lifting spots are presented in picture below.

NOTE!

Check chain's condition before every work shift. Only use stamped chains.



Picture 1: MAG's chains attach point example

5. OPERATION

After having ensured the proper installation of the MAG unit, it is ready for use.

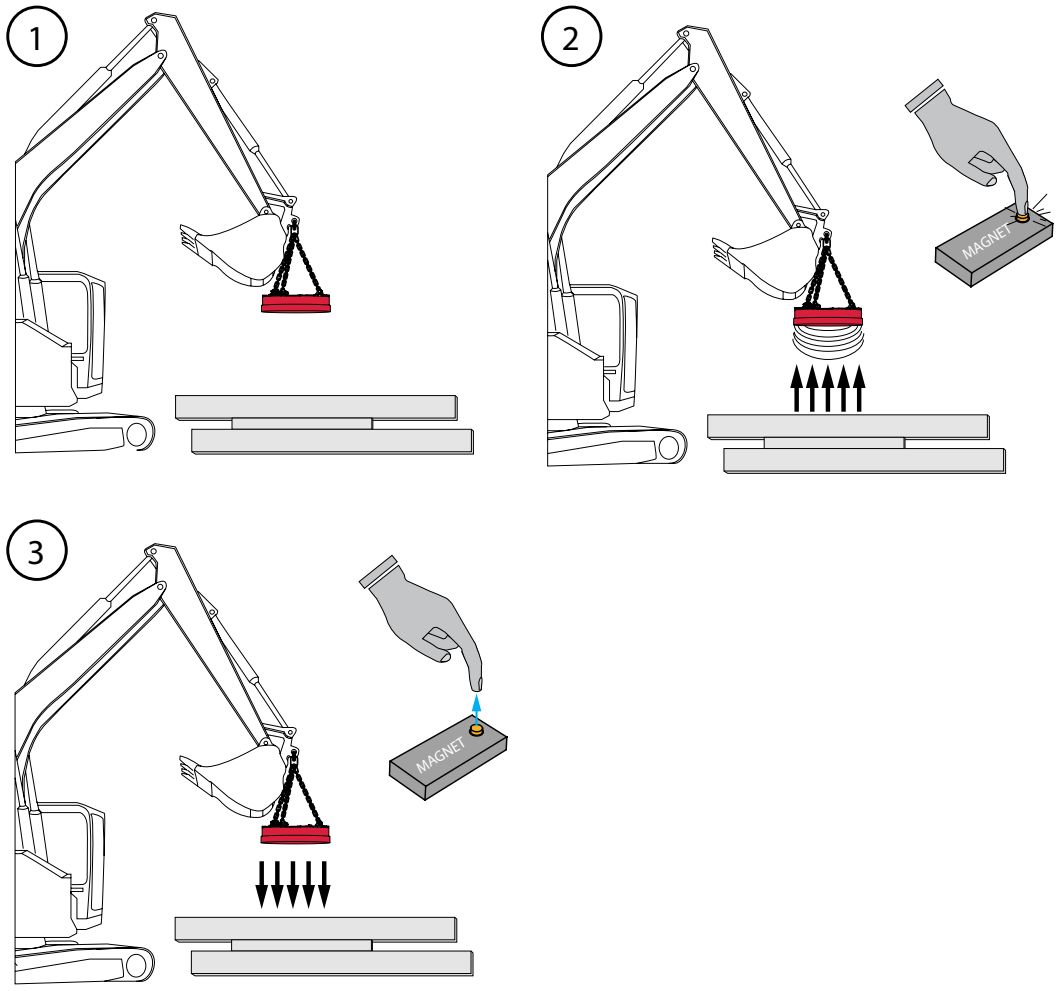
5.1. OPERATING THE MAG

1. Start base machine's engine and move the magnet on the scrap or metals.
2. Start the MAG.

NOTE!

The switch has to be pressed all the time during the collecting and moving metals to enable magnetisation.

3.Release the control switch to drop the collected metals.



Picture 2: Operating HMAG PRO

6. TECHNICAL SPECIFICATIONS

		MAG 700	MAG 900	MAG 1200	MAG 1400
OUTPUT CHARACHTERISTICS					
Generator power max.	**kW**	3	6	10	12
Magnet coil power max.	**KW**	2,7	5,5	9,5	11
Operating voltage	**VDC**	220±5%			
Operation control		Hydraulic			
Magnet coils allowed resistance (20 °C)	**Ohm**	16,1 ± 5%	9,8 ± 5%	5,4 ± 5%	4,8 ± 5%
Efficient duty rating	**ED%**	60	60	60	60
NOMINAL LIFTING CAPACITY					
Tear-off w/ air gap Ø/300	**kg (lbs)**	5500 (12100)	10500 (23100)	15000 (33000)	34000 (74800)
Slabs, blocks	**kg (lbs)**	2700 (5490)	5250 (11550)	7500 (16500)	9500 (20900)
Cast iron pigs	**kg (lbs)**	105 (231)	230 (506)	410 (902)	1100 (2420)
Scrap, **kg (lbs)**	**grade 3A**	80 (176)	200 (440)	370 (814)	1000 (2200)
	grade 24	70 (154)	190 (418)	360 (792)	900 (1980)
	grade 40	40 (88)	100 (220)	190 (418)	480 (1050)
HYDRAULIC POWER REQUIREMENTS					
Flow min.	**l/min (gpm)**	23 (6.7)	37 (9.8)	53 (14.0)	63 (16.6)
Required system pressure min.	**bar (psi)**	190 (2800)	190 (2800)	190 (2800)	190 (2800)
Pressure max.	**bar (psi)**	350 (5000)	350 (5000)	350 (5000)	350 (5000)
HYDRAULIC FLUID REQUIREMENTS					
Viscosity	**cSt**	10-200 / optimum 25-35			
Temperature	**°C (°F)**	max. 70 (158)*			
Filter ratio	**um**	25 or better			
Cooling capacity requirements	**kW**	1,4	2,4	3,1	3,5

7. MANUFACTURERS LIMITED WARRANTY

1.Warranty coverage

All hydraulic accessories manufactured by DYNASET OY are subject to the terms and conditions of this limited warranty. Products are warranted to the original purchaser to be free from defects in materials or workmanship. Exclusions from warranty are explained in item Exclusions from warranty.

2.Beginning of warranty period

Warranty period begins from the delivery date of the product. Delivery is considered to be done on the date when installation has been accomplished or purchaser has taken the product in use. Product is considered as taken in use at the date when DYNASET OY has delivered the product to purchaser, unless separately agreed otherwise by written agreement.

3.Warranty period

Warranty period is twenty four (24) months based on maximum of 2000 hours usage during this time period. In cases where the system is provided complete with certain special components (e.g. drive unit), those components are considered as a subject to their manufacturer's warranty.

4.Warranty procedures

Immediately upon identifying a problem which purchaser believes to be a failure subject to the product's limited warranty, purchaser must contact primary to the seller of the product. Contact must be made as soon as possible, latest thirty (30) days after the problem was identified. Seller and/or manufacturer technical staff determines the nature of the problem primarily by phone or e-mail. Purchaser commits to give necessary information and to perform routine diagnostic procedures in order to determine the nature of the problem and necessary procedures.

5.Warranty repairs

If the product is found to be defective during the warranty period, DYNASET OY will, at its option, either repair the product, author it to be repaired at its authorized workshop or exchange the defective product. If the product must be repaired elsewhere than premises of DYNASET OY or authorized workshop, all costs excluded from this warranty (traveling and waiting hours, daily allowance, traveling expenses and uninstallation/reinstallation costs) will be charged from the purchaser.

If the problem is not covered by this limited warranty, DYNASET OY has the right to charge purchaser of troubleshooting and repairing.

6.Delivery terms of warranty repair

If the product is found possible to be defective under this limited warranty and it needs to be repaired, DYNASET OY gives Warranty Return Number (WRN). Items being returned must be shipped, at the purchaser's cost, adequately packed for shipment, to the DYNASET OY or to other location authored by DYNASET OY.

Shipment documents must contain:

Purchaser's name and contact information

Receipt of original purchase

WRN code

Problem description

7.Warranty of repaired product

Warranty period of the product repaired under this limited warranty continues to the end of original warranty period.

8.Exclusions from warranty

This warranty shall not apply to:

- Failures due to normal wear and tear, improper installation, misuse, abuse, negligence, purchaser selection of improper product to intended use, accident, improper filtration of hydraulic oil or intake water or lack of maintenance.
- Cost of maintenance, adjustments, installation or startup.
- Coating, hydraulic oil, quick couplings and interconnection hoses (internal or external to system assemblies).
- Products altered or modified in a manner not authorized by DYNASET OY in writing.
- Products which have been repaired during warranty period by others than DYNASET OY or its authorized workshop.
- Costs of any other damage or loss, whether direct, indirect, incidental, special or consequential, arising out of the use of, or the inability to use, the product.
- Telephone or other communications expense.
- Product that is used in exceptional conditions, considered to cause excessive wear and tear.
- Faults caused by nature phenomenon's like flood, thunder, etc.

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8. PRODUCT DISPOSAL

Dispose and recycle all the DYNASET products and their packaging environmentally responsible way.

Do not dispose used oils, electrical components, batteries or any other hazardous waste with normal waste. They are harmful for the environment and can be recycled for re-use.

Contact your local waste recycling facility for more information about recycling hazardous waste.

NOTE!

Always act according to the waste legislation, regulations and recommendations in waste disposal and waste recycling issued by your local authorities.

9. DECLARATION OF CONFORMITY

We hereby declare that the design and manufacture of the product stated below are in conformity with the provisions of the European Parliament and Councils on the harmonization of the laws of Member States on the safety of machine's.

Machine directive 2006/42/EC

LVD directive 2014/35/EU

EMC directive 2014/30/EU

RoHs directive 2015/863

Applied conformity standards:

CEN EN ISO 4413: EN ISO 4413:2010 Hydraulic fluid power - General rules and safety requirements for systems and their components.

EN60204-1 Safety of machinery – Electrical equipment of machine's.

Manufacturer: **DYNASET Oy**
Menotie 3, FI-33470 Ylöjärvi, Finland

Product group: Magnet Power

Product: MAG Lifting Magnet

If the device has been modified by someone other than the manufacturer or without the manufacturer's permission, this declaration is not valid.

Timo Nieminen
R&D Manager
Menotie 3, FI-33470
Ylöjärvi, Finland 01.07.2019

DYNASET
POWERED BY HYDRAULICS

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ELECTRICITY
HG Hydraulic Generator
HGV POWER BOX Variable Hydraulic Generator System
HGV Variable Hydraulic Generator System
HWG Hydraulic Welding Generator
HGG Hydraulic Ground Power Generator

HIGH PRESSURE WATER
HPW Hydraulic High Pressure Water Pump
HPW Hydraulic Power Washer
KPL High Pressure Street Washing Unit
HPW-DUST High Pressure Dust Suppression System
PPL High Pressure Pipe Cleaning Unit
HDF Hydraulic Drilling Fluid Pump
HPW-FIRE High Pressure Firefighting System
FP Firefighting Piercing Kit
JPL High Pressure Bin Washing System
HSP Hydraulic Submersible Pump

COMPRESSED AIR
HK Hydraulic Piston Compressor
HKR Hydraulic Screw Compressor
HKL Hydraulic Rotary Vane Compressor

VACUUM
HCF Hydraulic Centrifugal Fan
HRVB Hydraulic Recycling Vacuum Bucket

MAGNET POWER
HMG PRO Hydraulic Magnet Generator
MAG Lifting Magnet
HMAG PRO Hydraulic Magnet

VIBRATION
HVB Hydraulic Vibra
HVD Hydraulic Directional Vibra
HRC Hydraulic Reversal Cylinder

POWER BOOSTING
HPI Hydraulic Pressure Intensifier
HPIC Hydraulic Pressure Intensifier for Cylinder

KNOW-HOW
Hydraulic Power Take-off (PTO)
Installation Valves
HMV Hydraulic Modular Valve System
HHK Hydraulic Grinder
HV Hydraulic Winch & HVY Hydraulic Winch Unit
De-Icing Technology
HEU Hydraulic Expansion Unit
HPU Hydraulic Power Unit
HRU Hydraulic Rescue Unit

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