

Techdrives

ESSENTIALS FOR MACHINE BUILDING











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Welcome to Techdrives. Here you will find a reliable source of essential components for machine builders in the UK and Ireland. These are high quality products from established manufacturers where we have a long relationship. Sales are supported by knowledgeable and experienced engineers, by our parent company Lenze Ltd and a two year warranty.

You can buy Techdrives products as single components, often from stock, or as part of a package solution. Special designs can be offered for higher value business. Contact our Bedford sales operation for more information. Techdrives products are also available through selected sales partners, details on request.



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SMALL GEARED MOTORS



3-SERIES GEARED MOTORS



cable 6-15W



square gearbox



flanged gearbox

Panasonic 3-series is a range of compact geared motors in the power range 6 to 90W that are quiet running and reliable. They have short lead times across a wide range of ratios and worldwide approvals CE/UL/cUL/CCC. Single phase models suit fixed speed applications on light duty machinery, particularly small conveyors. Three phase models suit fixed speed or inverter variable speed operation. Smallest sizes have a cable connection. From 60W alternatives of square and flanged gearboxes are possible.

Brake geared motors are designed for holding duties. Low cost QR quick reversing models have a constant friction braking system. Brake geared motors have a spring applied brake.

Powers 6 to 90W in 6 steps

Nominal output speeds 0.7 to 500 r/min in 23 steps

Output torques up to 29.4Nm

1-phase models 6 to 90W

Supply 230V \pm 10%, 50Hz

Enclosure IP54 (25 to 90W), IP65 on request

3-phase models 25 to 90W

400V + 10%, 50Hz for fixed speeds

230V + 10%, 50Hz for inverter drives

Enclosure IP54, IP65 on request

Braked motors 6 to 90W

Quick reversing 230V \pm 10% 1 phase 50Hz

Brake motors 1- and 3-phase supply

Enclosure IP44 (25 to 90W)

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MINAS BRUSHLESS GEARED MOTORS



MINAS GV



MINAS GP



MINAS GV 24V



MINAS KV

New Panasonic MINAS brushless drives are particularly economic and compact with single phase input and IP65 motor protection. Also models are available for 24V DC supply. 1% speed holding accuracy is available over a 1:133 range.

MINAS GV for powers 50 to 130W, output speeds 1.5 to 1300r/min and 1:133 speed range.

MINAS GP for powers 50 to 130W with accurate 4-point positioning.

MINAS GV & GP 24V DC 50W, output speeds 1.5 to 1000 r/min, 1:133 speed range, for cases where an AC supply cannot be used.

MINAS KV for powers 50 to 750W with servo-style motor, 100 to 4000 r/min continuous.

Minas GV is a general purpose drive with a wide range of available gearboxes. MINAS GP is a variant for 4 point positioning. MINAS KV features a servo-style motor for low-end servo applications and ideal for stepper motor upgrades.

MINAS SERVO MOTORS AND DRIVES

Four drive variants - EtherCAT, analogue control, pulse following and positioning applications.

Powers 50W to 1.5kW in 7 steps, higher powers on request.

Matched motors & drives



A5 EtherCAT



A5 Analogue



A5E Step & Direction



A4 Positioner

The Panasonic servo range with four available versions gives you the ultimate choice for compact, high performance and economic small drive systems. Encoders with up to 1.04 million pulses allow precise position control. Drives have an ultra-high response frequency and the option of Safe Torque Off to PL-d. Synchronous servo motors are compact with low inertias. Approvals include cUL and CSA.

Options available to create the complete servo system include gearheads, cables, RFI filters and I/O interface boards. Panatorm software for parameterisation, monitoring and diagnostics is free of charge.

MINAS SERVO SYSTEMS

Planetary geared motors 200W to 1.5kW with rated torques to 170Nm, speeds 60 to 1000r/min.

Lenze 3200 C or Trio MC4N PLC motion controllers for multi-axis systems.



Planetary geared motors



EtherCAT controllers

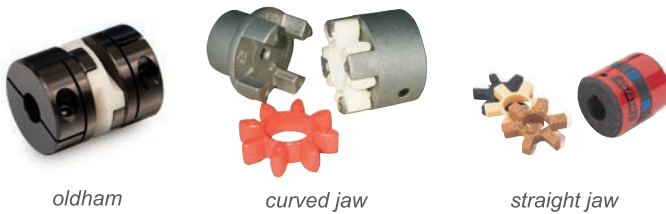
Planetary geared motors with exact ratio gearheads from 3 to 50 offer torque increases for slower drive requirements. Vogel MPL gearboxes are standard with backlash of 10-15 arcmins. Other models for lower backlash can be supplied for reversing drives.

EtherCAT is a fast and reliable real-time bus that is an economical solution for multi-axis drive networks. Two controllers are offered to go with the A5 EtherCAT drives giving simpler machine builds and easy commissioning up to 32 axes.

SHAFT COUPLINGS AND UNIVERSAL JOINTS

Mönninghoff

JAW TYPE COUPLINGS



oldham

curved jaw

straight jaw

Oldham couplings, torques 0.68 to 43Nm, shafts 4 to 30mm.

Curved jaw couplings types GR, GESM, GESA, torques 1 to 1465Nm, shafts 5 to 90mm.

Lovejoy straight jaw couplings type L, torques 0.4 to 660Nm, shafts 4 to 60 mm.

Jaw couplings are simple and economic designs that accept moderate misalignment and are electrically insulating. Oldham couplings with acetal or nylon elements suit small machinery. Curved jaw couplings have industry standard

dimensions and different grades of polyurethane element to vary stiffness. Lovejoy straight jaw couplings also have different grades of element and can be particularly economic with standard bore sizes.

ALL METAL COUPLINGS



beam

bellows

spring

Beam couplings type MW, torques 0.4 to 5Nm, shafts 3 to 12mm.

Bellows couplings type MBC, torques 2.5 to 45Nm, shafts 3 to 25mm.

Simplaflex spring couplings, torques 2.5 to 900Nm, shafts 3 to 75mm

All metal couplings are backlash free with variable levels of torsional stiffness. Beam designs are one piece miniature couplings in alloy or stainless steel. Bellows couplings are constructed in alloy and stainless steel giving very high

torsional stiffness which suits tacho and encoder drives. Simplaflex spring couplings are highly robust and deliver high torques with high misalignment capacity and small dimensions.

METAL DISC COUPLINGS



Mini-Servoflex

Servoflex

Arcoflex

Mini-Servoflex couplings type 328, torques 1 to 25Nm, shafts 4 to 24mm.

Servoflex couplings type 318, torques 35 to 500Nm, shafts 8 to 55mm.

Arcoflex couplings type 314, torques 800 to 23000Nm, shafts 30 to 150mm.

Monninghoff metal disc couplings are backlash free and have high torsional stiffness. The three models Mini-Servoflex, Servoflex and Arcoflex range from miniature to heavy duty. A wide range of options includes single flexing models, shaft

connections without keyways and spacer versions up to 6m long. These metal disc couplings are maintenance free and can be used at elevated temperatures.

SHAFT COUPLINGS AND UNIVERSAL JOINTS



OTHER SHAFT COUPLINGS

Barrel gear couplings, torques 10 to 700Nm in 10 sizes, shafts 10 to 80mm.

Hexaflex rubber disc couplings type 313, torques 100 to 2250Nm in 6 sizes, shafts 16 to 95mm.

BlueLine marine propellor shaft couplings, 100 to 2000Nm in 6 sizes, shafts 20 to 70mm.



barrel gear



rubber disc



marine couplings

Barrel gear couplings have a nylon sleeve and cast iron hubs. They are ideal for designs that require blind assembly. Monninghoff Hexaflex rubber disc couplings are robust, backlash free and torsionally soft. Spacer versions are available up to 3m long.

The BlueLine marine couplings are based on the Hexaflex design with stainless steel construction and easy mounting.

UNIVERSAL JOINTS

Single universal joints types G and H, shafts 6 to 50mm.

Double universal joints types GD and HD, shafts 6 to 50mm.

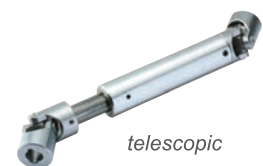
Telescopic universal joints types GA and HA, shafts 6 to 50mm, lengths up to 3m



single



double



telescopic

Universal joints transmit torque through high angles up to 45°. A single joint cannot accept parallel or axial misalignment and gives an output with fluctuating speed. Double joints can

give smooth running between two parallel shafts. Telescopic joints suit static adjustment of shaft positions. Stainless steel versions are available for most sizes.

COLLARS AND RIGID COUPLINGS

Shaft collars type MCL one-piece and MSP two-piece, shafts 3 to 50mm

Rigid couplings type MCLX one-piece and MSPX two-piece, shafts 6 to 50mm



shaft collar



rigid coupling

RULAND shaft collars are precision machined to provide accurate stops and locations. Construction is in alloy or stainless steel with one-piece split or two-piece designs.

Rigid joints connect shafts of equal diameter rigidly and without backlash. Construction is in steel or stainless steel with one-piece split or two-piece designs.

LINEAR MOTION



LINEAR ACTUATORS



LMR	light duty actuators	50 to 5000N
ATL	acme thread actuators	50 to 350000N
CLA	with built-in limit switches	50 to 25000N
BSA	ball screw actuators	50 to 123000N
UBA	'U' configuration for higher speeds	40 to 875mm/s
TMA	Solar tracking actuators	1 to 200kN
ILA	heavy duty actuators	1 to 200kN

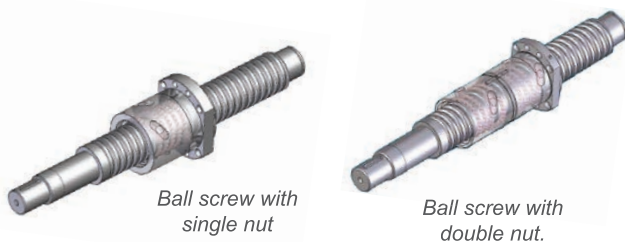
Strokes 50 to 1500mm

Linear actuators convert electrical energy to linear movement in a clean and controllable way. Acme screw models suit 15% duty, ball screw models up to 100%. Motors can be DC, AC or servo, fitted with brakes for higher linear speeds. Mounting brackets, integrated stroke limit switches, bellows, position feedback and other options are readily available.

Linear-Mech and Servomech are partner companies. The Linear-Mech range covers the smaller DC actuators and servo driven actuators. Servomech manufacture the larger actuators, screw jacks and ball screws. These linear motion products are made to order from a standard catalogue range. Special designs are possible for volume applications.

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BALL SCREWS



Screw diameters	16 to 100mm
Screw lengths	up to 5.7m
Linear speeds	up to 2m/s
Accuracy grades	7 to 3
Made to	DIN 69051 & ISO 3408

Ball screw systems consisting of a ball screw and a ball nut achieve linear motion with high precision and/or high speeds. Efficiency is high at about 90% and ambient temperatures up to 110 degrees are possible.

We aim to make the selection and ordering process easy. From your data we make a preliminary selection and check it with the factory. Subsequently our proposal will be technically correct to suit the speeds, forces, accuracy, duty cycle and lifetime you require.

Servomech manufacture the screws and nuts in-house at their factory on modern machine tools to exacting standards of precision. Complete control allows specials and short lead times to be offered.

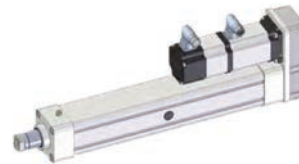


electromechanical actuators

SERVO DRIVEN ACTUATORS

SA IL in-line design of servo motor and ball screw
 SA PD ball screw with parallel mounted servo motor

Speeds 50 to 1500 mm/s
 Forces 100 to 40000N
 Strokes 50 to 1500mm



SA PD actuator



SA IL actuator

The packaged designs of SA servo driven actuators offers major advantages in applications previously run with pneumatic and hydraulic cylinders. They are clean and can reduce energy requirements by up to 90%. Control of the speed profile and positioning accuracy is easier to achieve.

SA actuators have standard cylinder footprints. They consist of an internal precision ball screw driven by a braked servo motor. Limit switches, high quality bearings and seals are fitted. Actuators are built to order to suit the speeds, forces and strokes required. Servo drives and position controllers are available.

SCREW JACKS

SJ general purpose jacks 0.5 to 100 tonne, travelling screw & travelling nut
 MA high efficiency jacks 0.5 to 35 tonne, travelling screw & travelling nut
 MA BS travelling ball screw patented design for high efficiency 0.5 to 35 tonne.
 MA BS & SJ BS travelling ball nut designs for up to 100% duty 0.5 to 40 tonne
 HS high speed ball screw jacks for linear speeds up to 1m/s, 1 to 20 tonne

Servomech SJ and MA screw jacks use acme threads for medium to high forces and strokes from 100mm up to 6m. Linear speeds are usually low and duty cycles up to 40% are possible. The two main variants are travelling nut and travelling screw and inputs can be free shafts or motorised. A wide range of options includes limit switches, safety nuts and wear monitors.

Ball screws jacks have high efficiency for reduced power requirements and high linear speeds. Duty cycles up to 100% are possible. HS high speed jacks can be supplied with servo motor and controller. Multi-jack lifting systems with motors, gearboxes and shaft couplings can be supplied.



type SJ with travelling screw



type MA with travelling nut



type MA BS travelling screw



type HS high speed

SIGNAL TOWERS



- Type LCE signal towers 40mm diameter
- Type LU5 modular signal towers 50mm
- Type LME signal towers 60mm
- Type LU7 modular signal towers 70mm
- Type LS7 70mm towers with IP67 enclosure
- Type WE wall mounted signal towers

Patlite signal towers use LED lighting that gives high visibility, very low energy consumption and is maintenance free. Models are available with 1 to 5 colours, base or pole mount

with optional buzzer alarm, enclosure IP67 and diameters from 25 to 100mm. Also available are wall mounted, 25mm diameter super-slim towers and models with voice annunciators.

SIGNAL LIGHTS AND BEACONS



Types NE, PE, KHE signal lights with flashing or continuous illumination, diameters 57 to 100mm.

Types RLE, RKE, RFT, RLR, WH rotating beacons, four optional colours and audible alarm/annunciator, diameters 82 to 162 mm.

Signal lights are non-rotating warning displays with optional sound alarm and LED bulbs. They are maintenance free with enclosures up to IP65. The new NE-CL7 features 7 colours in a single body.

Rotating beacons use a mirror reflection system to give extra visibility indoors or outdoors, bulbs are maintenance free LEDs and enclosure is up to IP66.

LIGHT BARS AND VOICE ANNUNCIATORS



Types CLA, CWA and CLK light bars and work lights up to 1500mm long giving 1700 lux at 500mm.

Type BSV voice annunciator programmed by SD card for up to 60s voice message at 87dB

LED light bars are machine lighting that is cool running, energy efficient and bright without glare. They suit use in confined spaces and wet areas as enclosure is up to IP69K and supply is 24V DC. LED spotlights are also available.

Voice annunciators deliver pre-recorded alarm sounds or voice messages at up to 87 dB. Signal towers with voice annunciators are also available.

SERVO GEARHEADS

Servo planetary types MPR, MPG for torques 20-1000Nm, ratios 3 to 100.

Low cost planetary type MPL for torques 15 to 400Nm, ratios 3 to 100.

Servo hypoid gearheads SK for torques 40 to 150Nm, ratios 3 to 10.

Servo hypoid gearheads SKP with planetary stage, torques 70 to 550Nm, ratios 12 to 100



MPR, MPG, servo planetary



MPL low cost planetary



SK servo hypoid

Low backlash planetary gearheads are easily adapted to servo motors. They are compact with low inertia and offer ratios 3 to 100 with low backlash. Matching synchronous and asynchronous motors are available.

Servo hypoid bevel gearheads give a high precision right angle connection with low backlash. A planetary gear stage can be added to achieve higher ratios.

MECHANICAL GEARS

Spiral bevel gearboxes types K, L for torques 10 to 8500Nm, ratios 0.5 to 6.

Hollow shaft spiral bevel gearboxes type H for torques 10 to 8500Nm.

Bevel helical gearboxes KS, KSH for torques 100 to 12800Nm, ratios 6 to 48.



K, L spiral bevel gearboxes



H hollow shaft spiral bevel



KS, KSH bevel helical

Spiral bevel gearboxes are right angle designs with multiple shaft options for torques 10 to 8500Nm. They have high efficiency and low backlash.

Bevel helical gearboxes are highly efficient, compact and have low backlash suiting them to servo and reversing drives. Male or hollow shaft outputs available.

INDUSTRIAL GEARS

Industrial planetary type P, MP for torques 600 to 50000Nm, ratios 3.4 to 1575.

Rack & pinion systems for axial forces 2000 to 16000N



P, MP industrial planetary



rack & pinion system

Industrial planetary gearboxes are robust suiting general duties with free shaft or motorised input. Specials up to 150 kNm are available.

Rack & pinion systems combine a Vogel MPR planetary gearbox with precision ground rack for very low backlash. Rack lengths 0.5 to 2m can be combined for long strokes.

CLUTCHES AND BRAKES

INTORQ

STANDARD SPRING APPLIED BRAKES



*BFK 457
standard brake*

*BFK458
modular brake*

*BFK 468
high-torque*

INTORQ are a world leader in spring applied brakes manufacturing more than 500,000/year. These standard brakes are readily available and give a highly reliable braking torque when power is removed. Release is by applying a DC voltage from 12 to 205V.

- BFK 457 simple pre-assembled brakes with torques 0.12 to 125Nm
- BFK 458 modular spring applied brakes with many options 2 to 600Nm
- BFK 468 multi-pole high torque spring applied brakes 100 to 2400Nm

A wide range of standard options includes manual release, microswitches and rectifiers. INTORQ spring applied brakes give safe stopping & holding worldwide on brake motors, hoists, lifts, wind turbines and theatre equipment.

PROJECT SPRING APPLIED BRAKES



*BFK 466
caliper brakes*

*BFK461
IP65 brakes*

*BFK470/471
IP66 brakes*

The INTORQ range includes brakes designed for specific market segments, for example lifts, servo motors, wind turbines and dockside cranes. Special designs can be considered for volume applications.

- BFK 466 multi-pole spring applied calipers suiting torques up to 10000Nm.
- BFK 461 IP65 enclosed brakes for torques 4 to 46Nm
- BFK470/471 medium to large brakes with IP66 enclosure 35 to 1500Nm

Multi-coil caliper brakes suit brake discs up to 600mm diameter. Other brakes with high enclosure suit CCV (cold climate conditions) with temperatures down to -40°C.

POWER ON CLUTCHES AND BRAKES



*14.105
electromagnetic
clutch*

*14.115
electromagnetic
brakes*

These INTORQ clutches and brakes are engaged by application of DC current. They give a reliable and stable torque in dry operating conditions. Engagement is usually done dynamically.

- 14.105 electromagnetic clutches for rate torques 7.5 to 480Nm and shaft sizes 10 to 70mm.
- 14.115 electromagnetic brakes with same torques & bore sizes

Standard voltage: 24DC, specials on request

Clutches split or disconnect drives and both flange and bearing mounted models are available. All models are backlash free and have low wear rates and maintenance requirements.

TOOTH CLUTCHES, LOCKING BUSHES

Mönninghoff

546, 550	electromagnetic tooth clutches 20 to 2200Nm
543, 544	large tooth clutches 320 to 16000Nm
549	backlash free clutches 25 to 600Nm
547	spring applied clutches 100 to 1600Nm
560	tooth brakes 20 to 2200Nm
675	pneumatic tooth clutches 80 to 2200Nm
450	high torque friction clutch 400-2000Nm

TOOTH CLUTCHES AND BRAKES



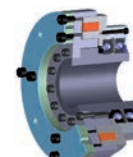
electromagnetic tooth clutch



electromagnetic tooth brake



pneumatic tooth clutch



high torque clutch

Monninghoff tooth clutches transmit high torques through the electromagnetic engagement of drive teeth. Engagement is done at standstill or low speed, release can be at any speed. Special tooth forms are available, for example to synchronise

input to output or to act as sensitive torque limiters. Operation is by DC voltage or up to 6 bar pressure for the pneumatic models. Spring applied clutches are released by DC voltage. High torque clutches have 24V DC actuation and suit power take offs and wet/dirty environments.

TOLLOK®

Main models

TLK110	6 to 130mm, suits hubs with small diameters
TLK130/131	20 to 180mm, general purpose
TLK200	20 to 900mm, industry standard dimensions
TLK300	6 to 540mm, locking rings
TLK350	6 to 50mm, fewer screws for easy mounting
TLK400/450	25 to 400mm, heavy duty bushes
TLK600 series	12 to 620mm, shrink disc couplings

TOLLOK MECHANICAL LOCKING BUSHES



TLK110



TLK130/131



TLK200



TLK350



TLK400/450



shrink disc

Mechanical locking bushes give a keyless connection between shaft and hub that can be adjusted radially and axially, also that can be dismantled and re-used. Multiple bolts create a connection that is economic and backlash free.

Tollok are established experts in this field, manufacturing 24 different ranges to suit standard and niche applications, also specials. Main models and their features are described in the Quick Selector on our website.

TORQUE LIMITERS



FRICITION TORQUE LIMITERS



type DF



type DF/TAC

Friction torque limiters are simple and low cost devices for the protection of machinery and tooling. On overload they slip whilst continuing to transmit torque.

Type DF friction torque limiters, torques 1 to 23000Nm.

Type DF/TAC, DF/GAS and DF/GEC versions with flexible couplings for in-line drives.

DF models are designed for offset drives by chain, belt or gear. Assemblies with torsionally soft and torsionally rigid flexible couplings are available for in-line drives.

BALL AND ROLLER DESIGNS



type EDF/F



type DSS



type DSR/F

Type EDF/F low cost ball torque limiters, torques 7 to 1450Nm.

Type DSS ball torque limiters, general purpose & sensitive, 2 to 2050Nm.

Type DSR/F roller torque limiters, can synchronise input to output, 10 to 12000Nm

ComInTec torque limiters prevent machine damage and costly-downtime in cases where an accidental overload occurs. They limit the maximum load from the drive and can act as a clutch to disconnect.

Ball and roller designs are sensitive and accurate in release torques. They are mechanically adjustable and axial movement on overload allows proximity switch selection. A wide range of models suits most machinery.

BACKLASH FREE TORQUE LIMITERS



type DSS/SG



type DSS/SG/RF

Backlash free torque limiters suit precision machinery, servo and reversing drives. There are two spring variants, Positive springs have normal action and sensitivity. Negative springs have force that reduces on overload giving extra sensitivity.

Type DSS/SG backlash free ball designs, positive or negative spring profiles, 5 to 750Nm.

Type DSS/SG/RF backlash free with free rotation, 10 to 1200Nm

The free release version DSS/SG/RF remains disconnected after the drive is stopped and needs manual reset. Shaft connections without keyways and backlash free couplings are available.



ComInTec®

PNEUMATIC DESIGNS

Type DSR/F/AP pneumatic roller type torque limiter, 7 to 30000Nm.

Type DSR/TF/AP pneumatic friction type torque limiter, 3 to 875 Nm.



type DSR/F/AP



type DSR/TF/AP

Pneumatic actuation of these torque limiters gives the advantage of control and the ability to disengage. Release torque is proportional to air pressure so multi-level torque limiting is

possible. Roller models synchronise input to output at 360° or at a fraction of a revolution. Friction models can act as clutches or tensioning devices.

OTHER TORQUE LIMITERS

Type PR B5 mounted limiters for gearboxes, 3 to 720Nm.

Type DSA axial force limiters, three sizes for forces 25 to 4700N.

Type DSM high torque modular torque limiters, 200 to 9000Nm



type PR



type DSM



type DSA

PR torque limiters mount to the input of efficient gearboxes to give cost-effective protection. Axial force limiters trip when an adjustable pre-set force is exceeded in either tension or compression. They particularly suit torque arm mounting and reciprocating drives.

The new DSM torque limiter save a modular design that allows easy adjustment and free rotation after overload. They have a high speed rating of 3000r/min.

Lenze

For your complete drive and automation solution talk to us about the Lenze range. We can work with you to create innovative machine designs from the first idea through to support in the field.

Wide ranging products start with IPC and PLC controls with options for visualisation and I/O. Inverter and servo drives are matched with geared motors from 6W to 45kW.

Our experienced engineers and interactive sizing software make it easy for you. Lenze Systems can give you software writing and panel design/build.

See www.lenze.com



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TECH0515

ESSENTIALS
FOR MACHINE
BUILDING