

Process	Generator (Perturbative order)	Parton shower	Cross section	Additional corrections
ggH	MADGRAPH5_aMC@NLO (NLO QCD)	PYTHIA	N3LO QCD, NLO EW	$p_T(H)$ from NNLOPS
VBF	POWHEG (NLO QCD)	PYTHIA dipole shower	NNLO QCD, NLO EW	—
qq \rightarrow VH	POWHEG (NLO QCD)	PYTHIA	NNLO QCD, NLO EW	—
gg \rightarrow ZH	POWHEG (LO)	PYTHIA	NNLO QCD, NLO EW	—
t \bar{t} H	POWHEG (NLO QCD)	PYTHIA	NLO QCD, NLO EW	—
b \bar{b} H	POWHEG (NLO QCD)	PYTHIA	NLO QCD	—
tHq	MADGRAPH5_aMC@NLO (LO)	PYTHIA	NLO QCD	—
tHW	MADGRAPH5_aMC@NLO (LO)	PYTHIA	NLO QCD	—
Drell–Yan	MADGRAPH5_aMC@NLO (NLO QCD)	PYTHIA	NNLO QCD, NLO EW	—
Zjj-EW	MADGRAPH5_aMC@NLO (LO)	HERWIG++/HERWIG 7	LO	—
t \bar{t}	POWHEG (NLO QCD)	PYTHIA	NNLO QCD	—
Single top quark	POWHEG/MADGRAPH5_aMC@NLO (NLO QCD)	PYTHIA	NLO QCD	—
Diboson (VV)	POWHEG/MADGRAPH5_aMC@NLO (NLO QCD)	PYTHIA	NLO QCD	NNLO/NLO K factors
gg \rightarrow ZZ	MCFM (LO)	PYTHIA	LO	NNLO/LO K factors
t \bar{t} V, t \bar{t} VV	MADGRAPH5_aMC@NLO (NLO QCD)	PYTHIA	NLO QCD	—
Triboson (VVV)	MADGRAPH5_aMC@NLO (NLO QCD)	PYTHIA	NLO QCD	—